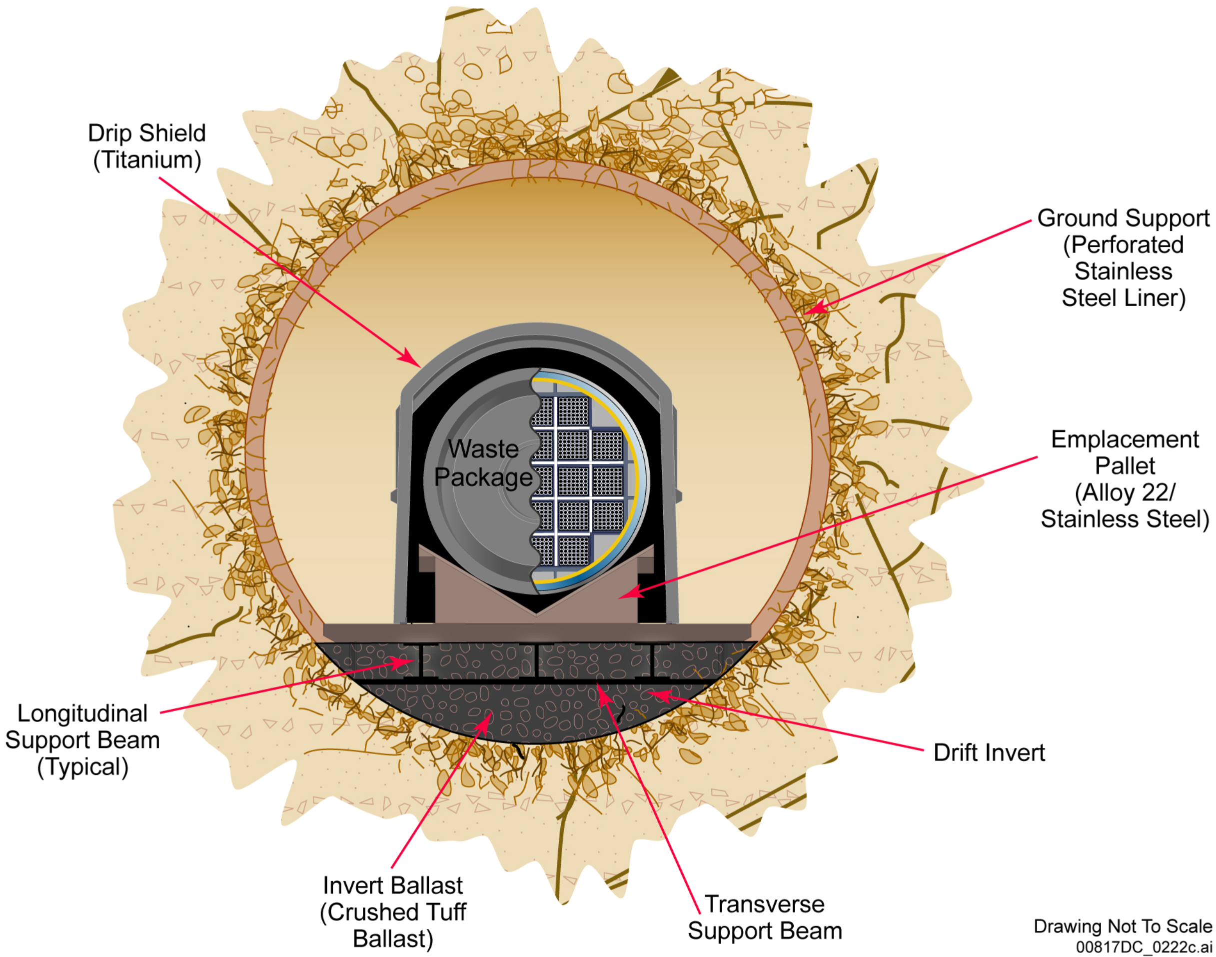


Source: Modified from SNL 2007 [DIRS 179354], Figure 4-1.

Figure ES-19. Cross-Section Illustration of the EBS

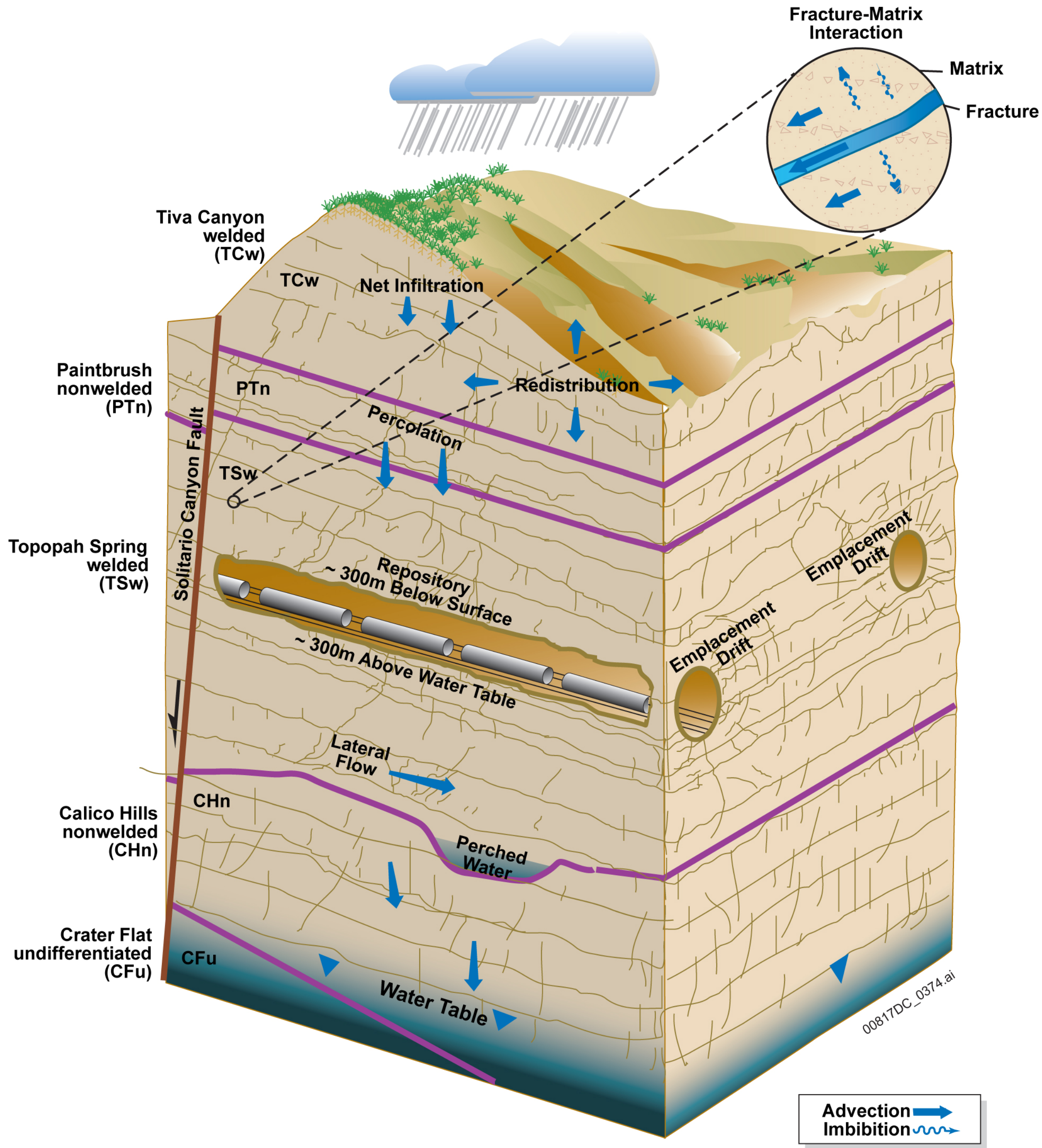


Figure ES-20. Conceptual Drawing of Mountain-Scale Flow Processes

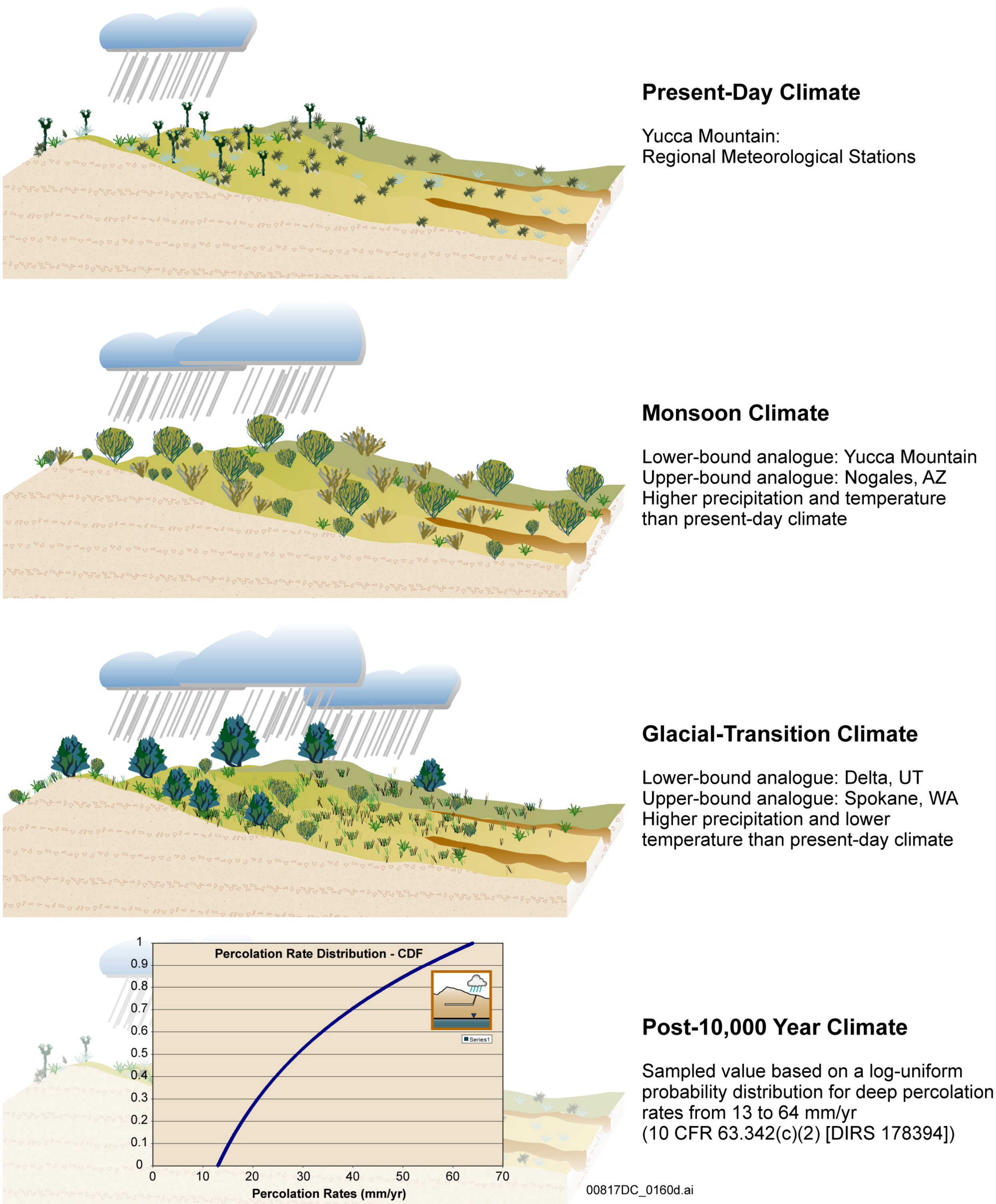
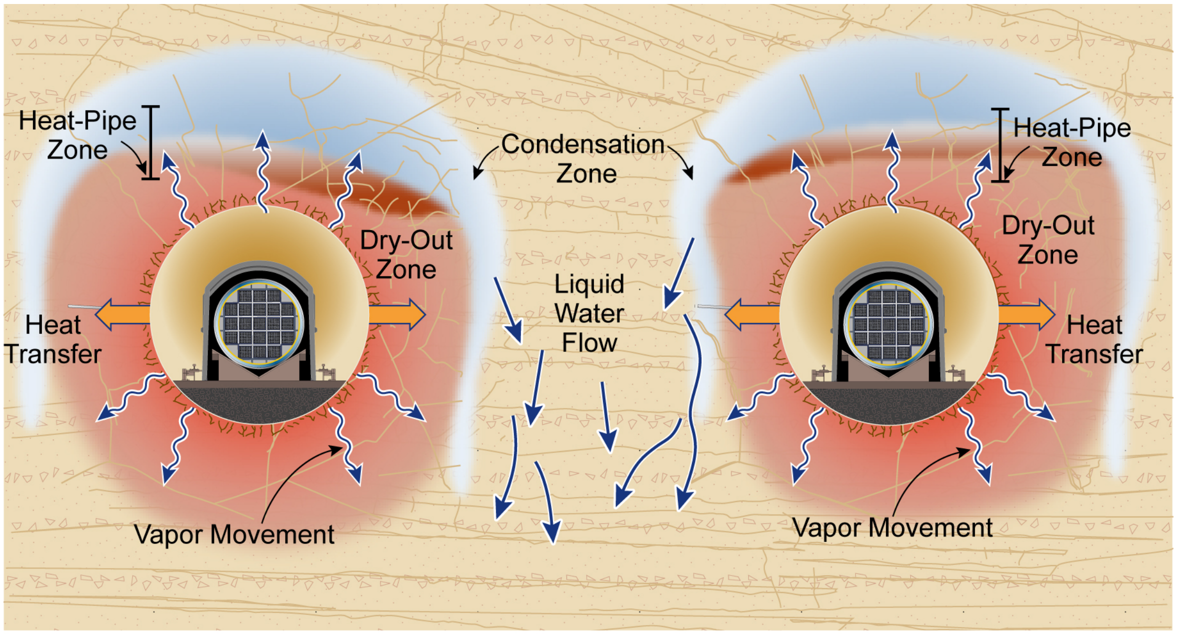
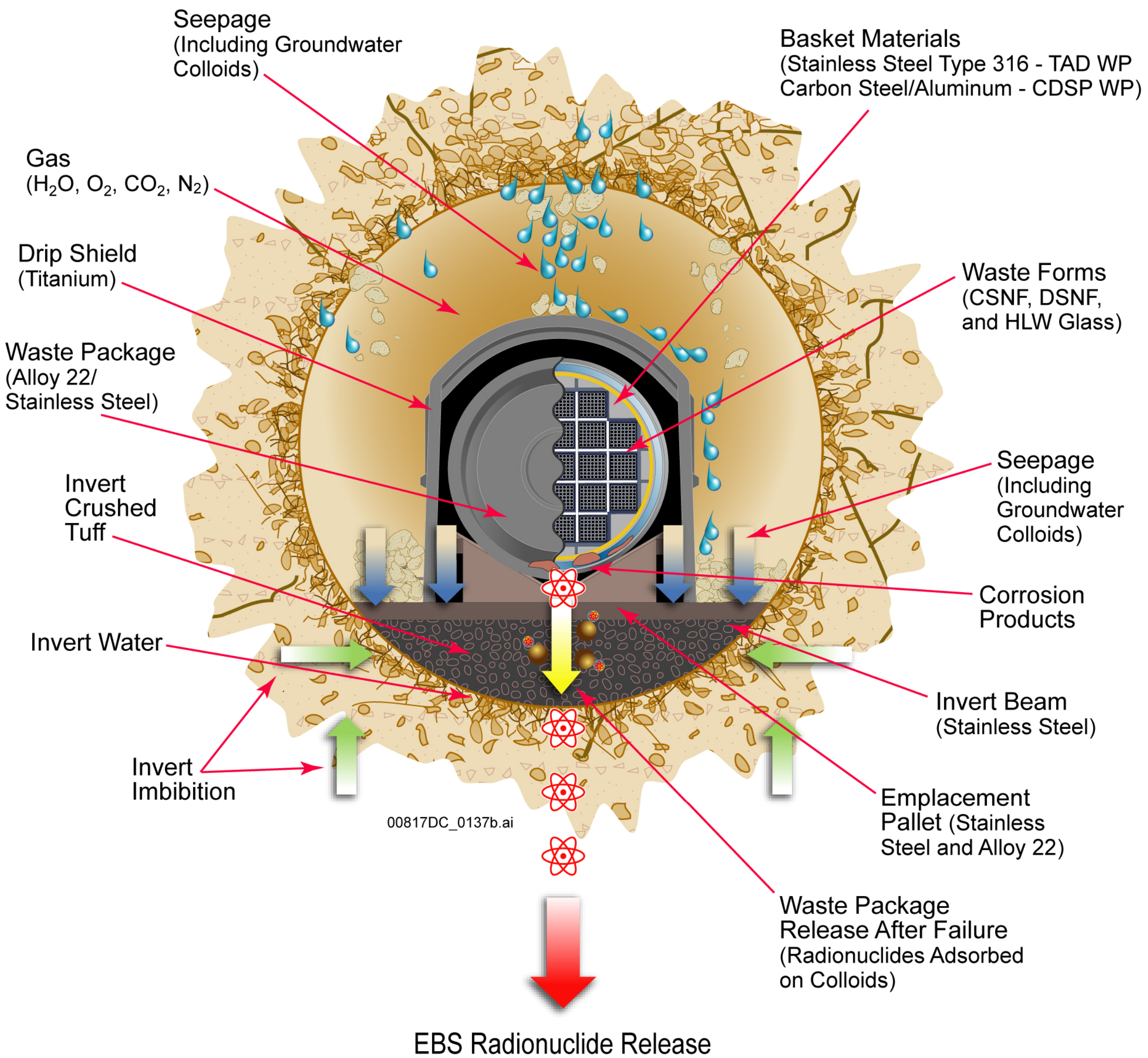


Figure ES-21. Illustration of the Four Climate Periods Used in the TSPA-LA Model and the Analogues for the Monsoon and Glacial-Transition Climates



Source: Modified from BSC 2004 [DIRS 169734], Figure 5-81.

Figure ES-22. Schematic Illustration (not to scale) of Thermal-Hydrologic Processes in the Vicinity of the Emplacement Drifts Due to Repository Heating



NOTE: Discussion and analysis of the features and processes illustrated on this figure can be found in *EBS Radionuclide Transport Abstraction* (SNL 2007 [DIRS 177407]), Section 6.1.1, Figure 6.1-1).

Figure ES-23. General EBS Design Features and Materials, Water Movement, and Drift Degradation

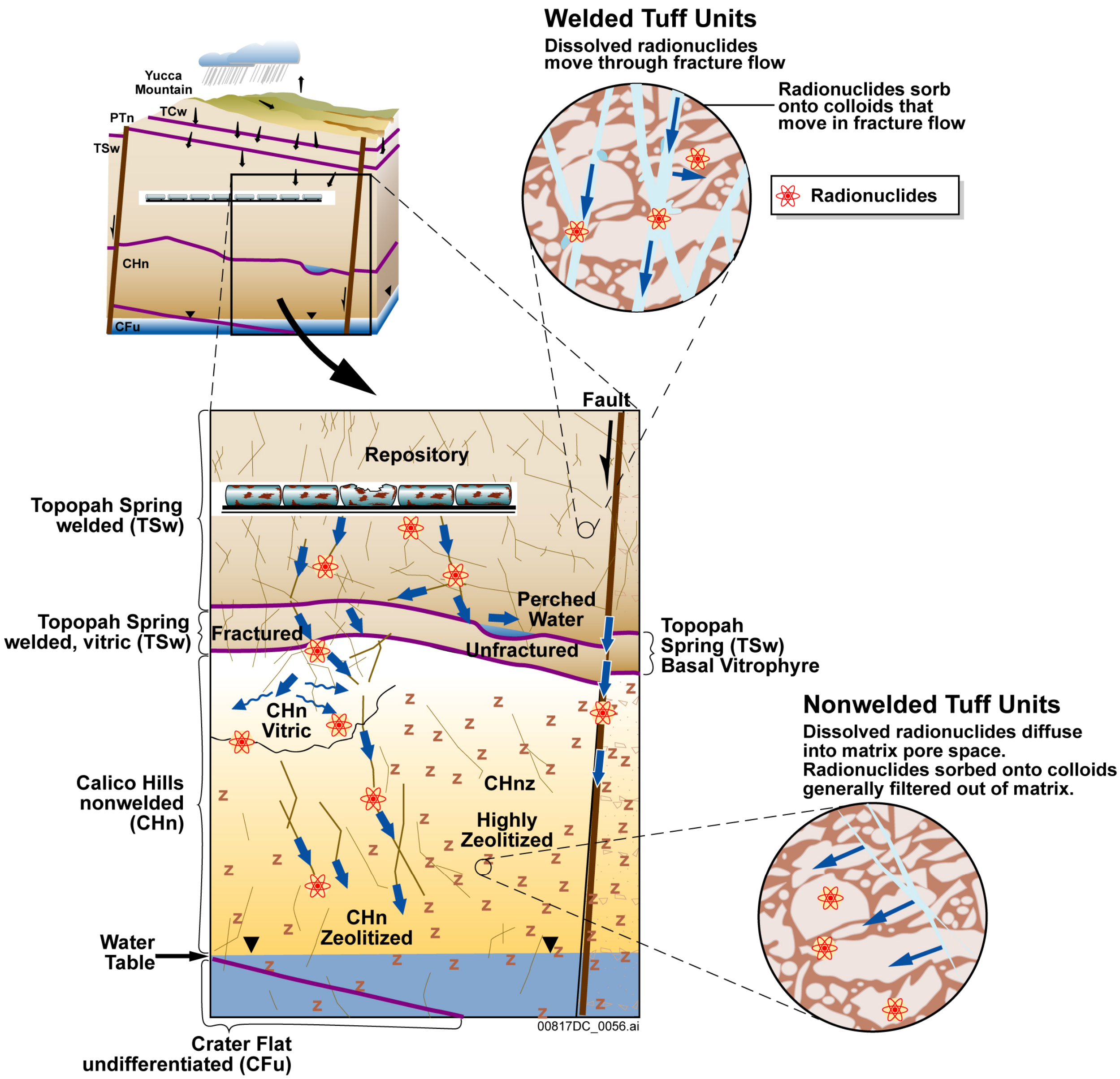


Figure ES-24. Conceptual Drawing of Unsaturated Zone Transport Processes

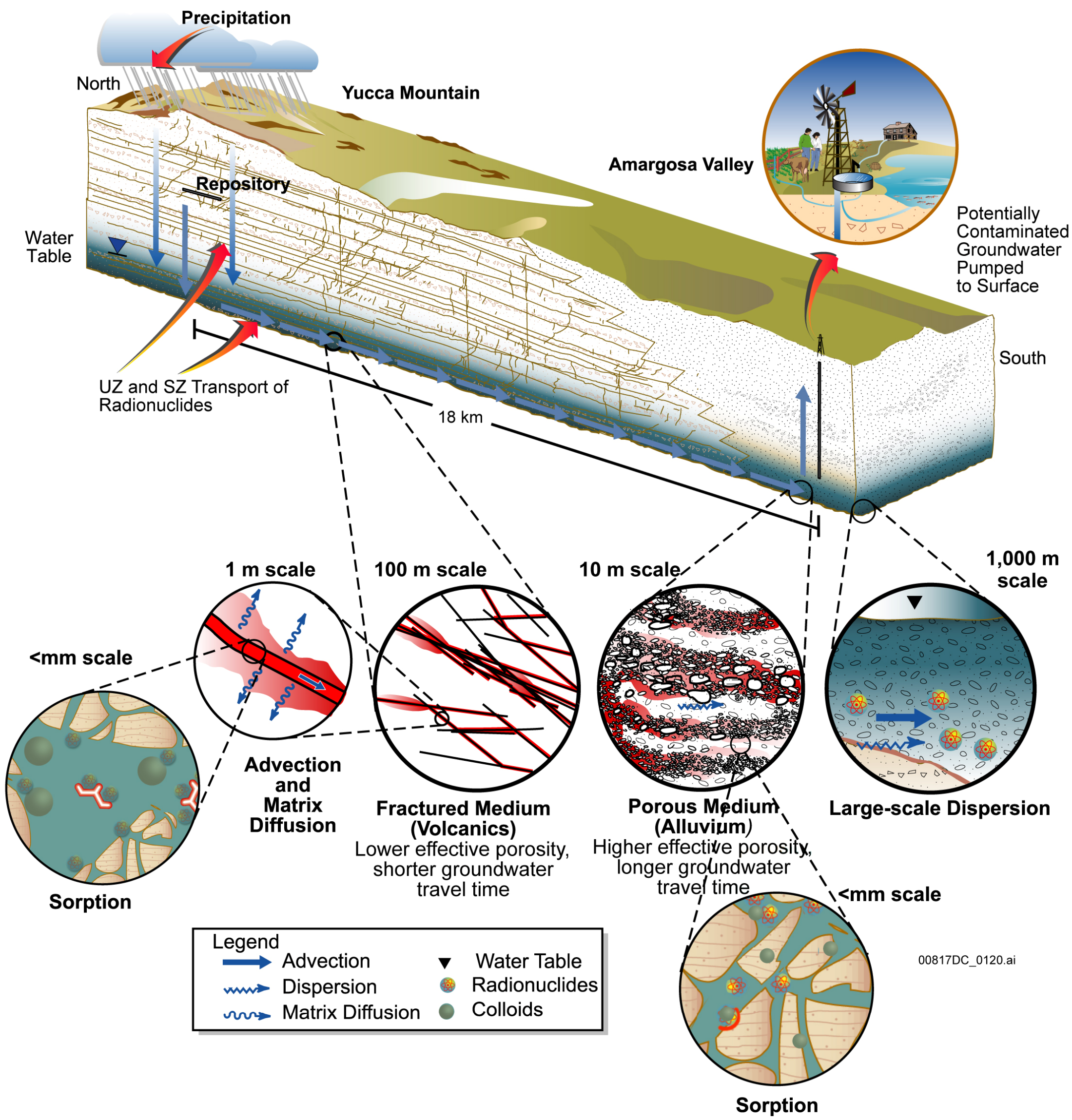
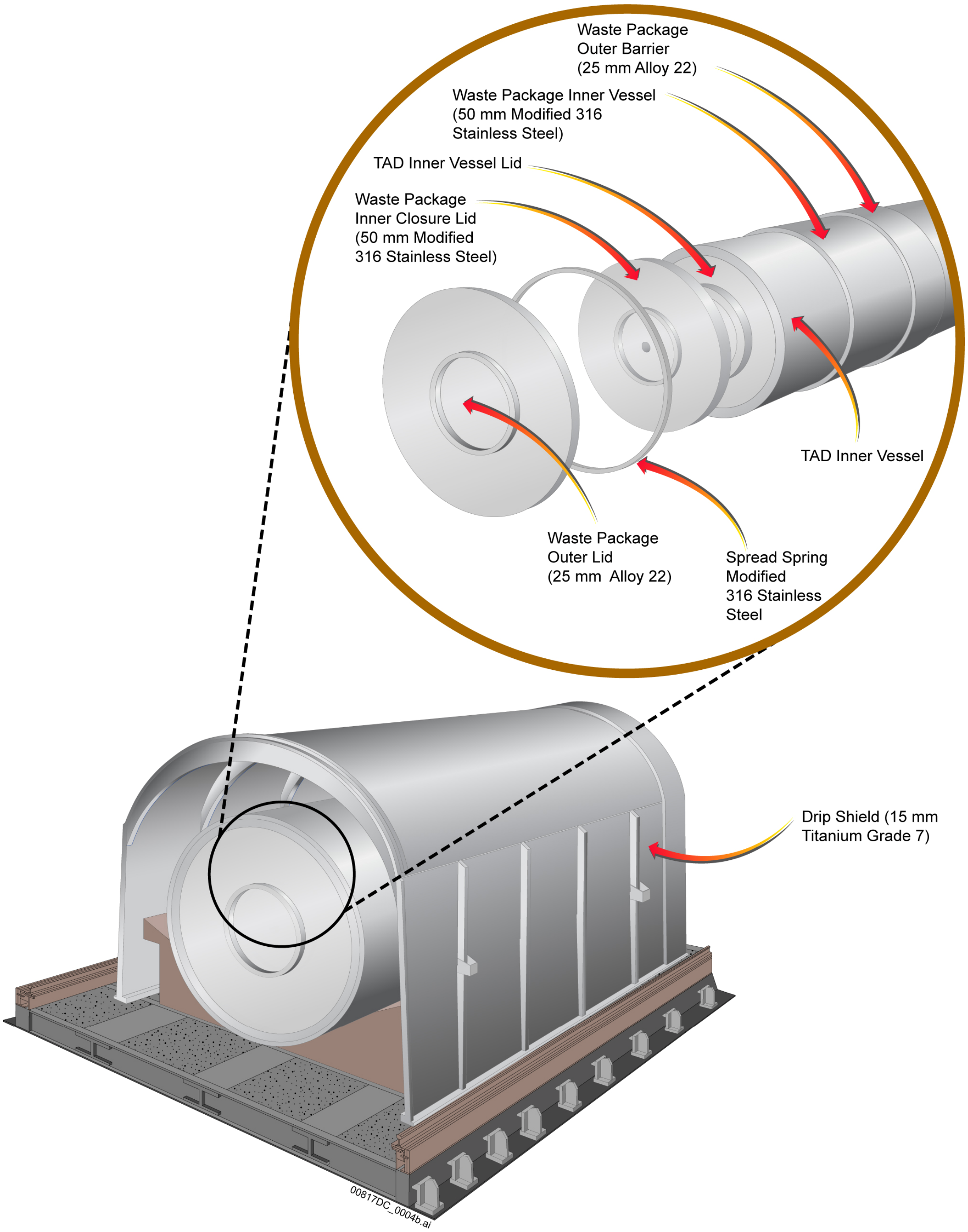
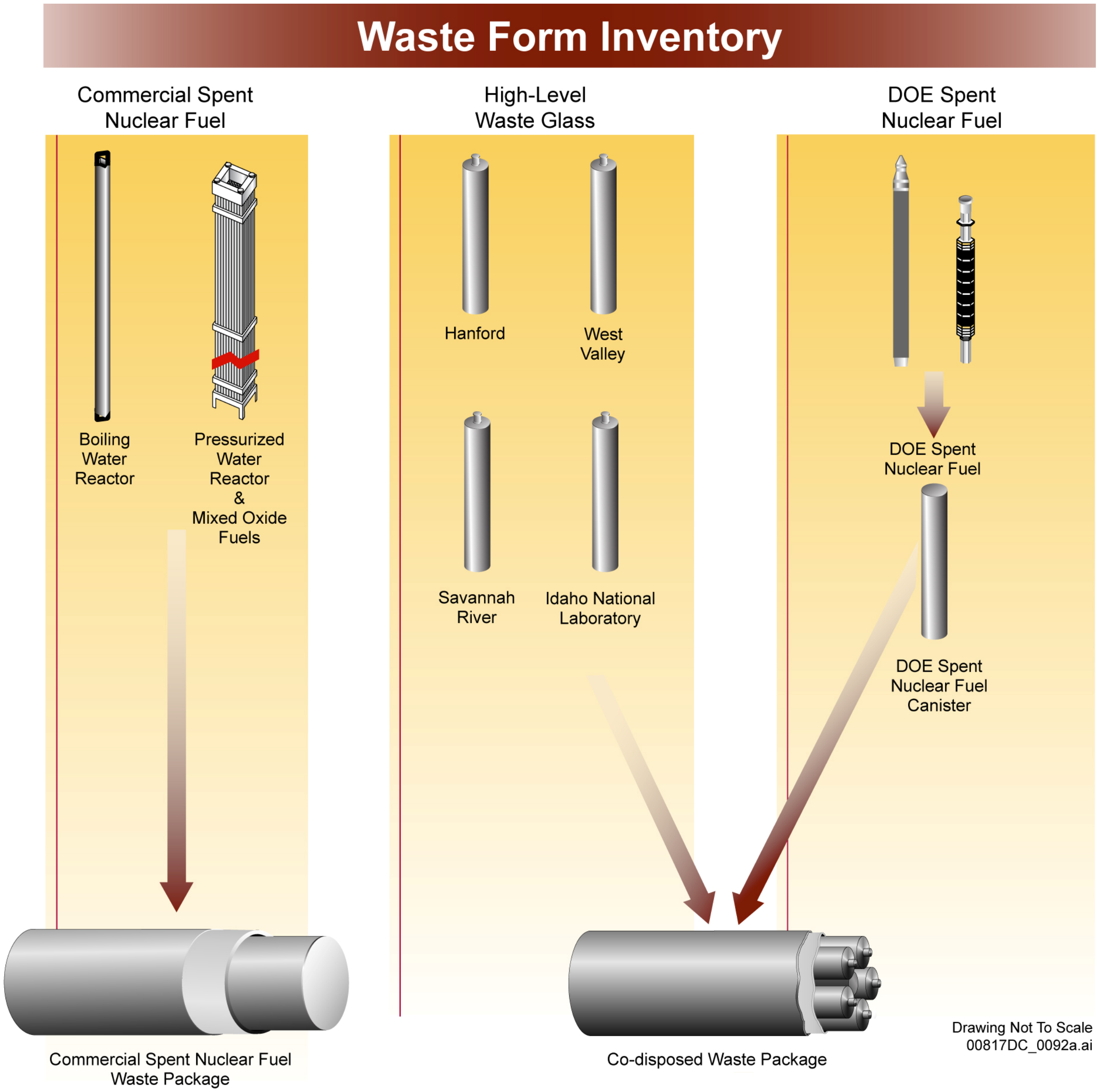


Figure ES-25. Conceptualization of Features and Processes Important to Saturated Zone Transport



NOTE: SNL 2007 [DIRS 179394] and [DIRS 179354].

Figure ES-26. Schematic Design of the Drip Shield and Waste Package



Source: Modified from SNL 2007 [DIRS 180472], Figure 6-1.

NOTE: For modeling purposes, the naval fuels are treated as commercial spent nuclear fuel.

Figure ES-27. Three Waste Types Grouped into Two Representative Waste Packages: CSNF and CDSP WPs

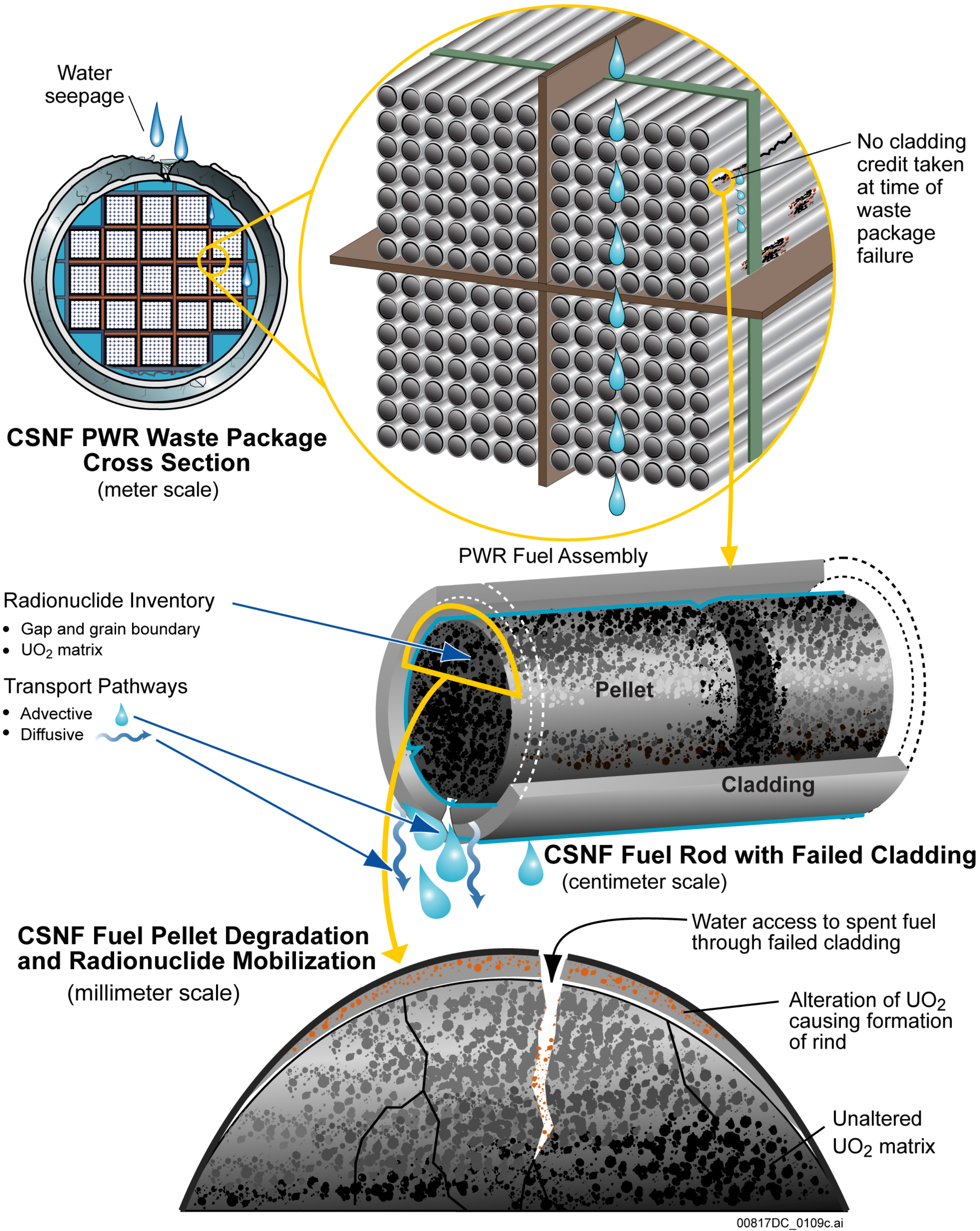


Figure ES-28. Schematic of CSNF Waste Form Degradation Mechanisms at Various Scales

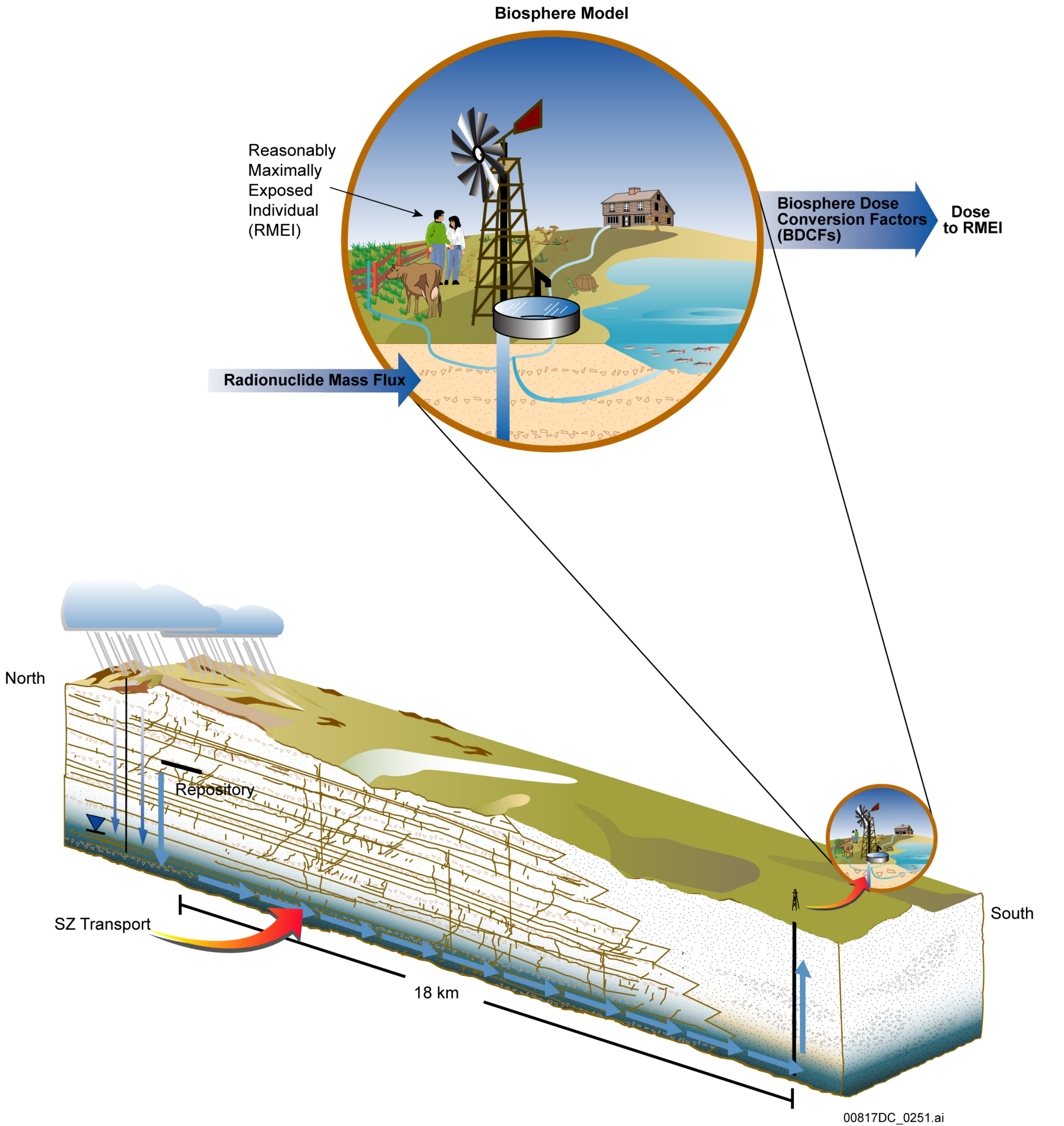


Figure ES-29. Overview of the Biosphere Groundwater Scenario Showing Groundwater Transport of Radionuclides and Uptake by the RMEI

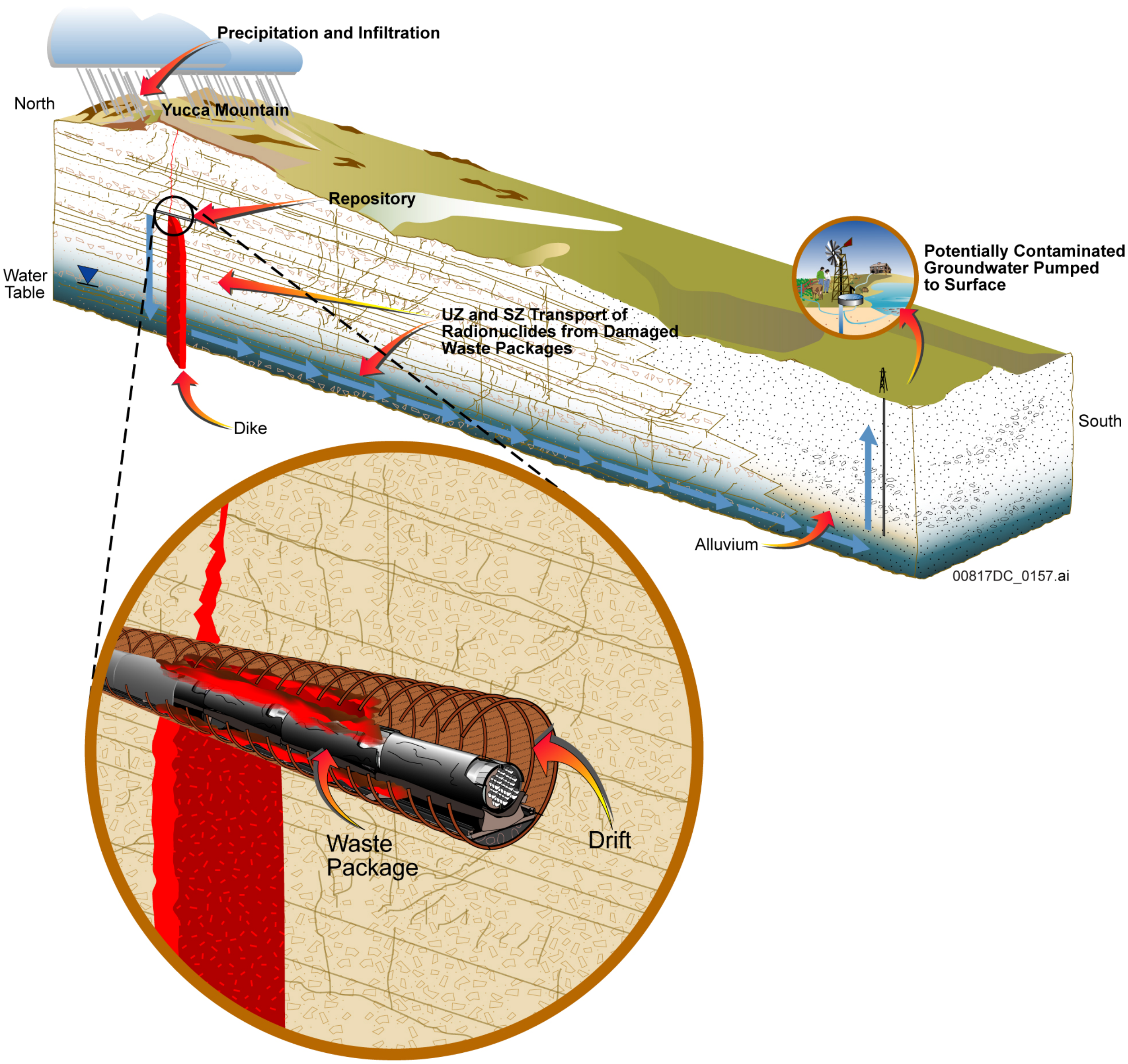


Figure ES-30. Schematic Diagram of the Intersection of an Igneous Dike with the Repository and Waste Packages

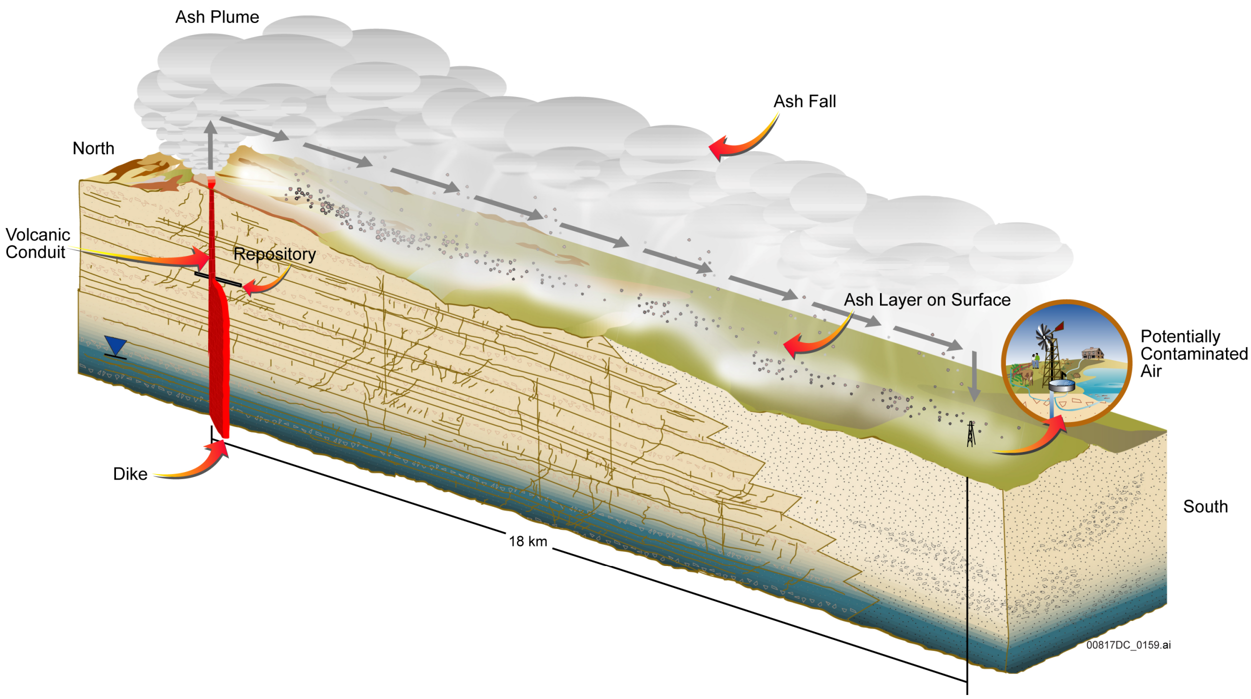


Figure ES-31. Schematic Representation of a Volcanic Eruption at Yucca Mountain Showing Transport of Radioactive Waste in a Tephra Plume

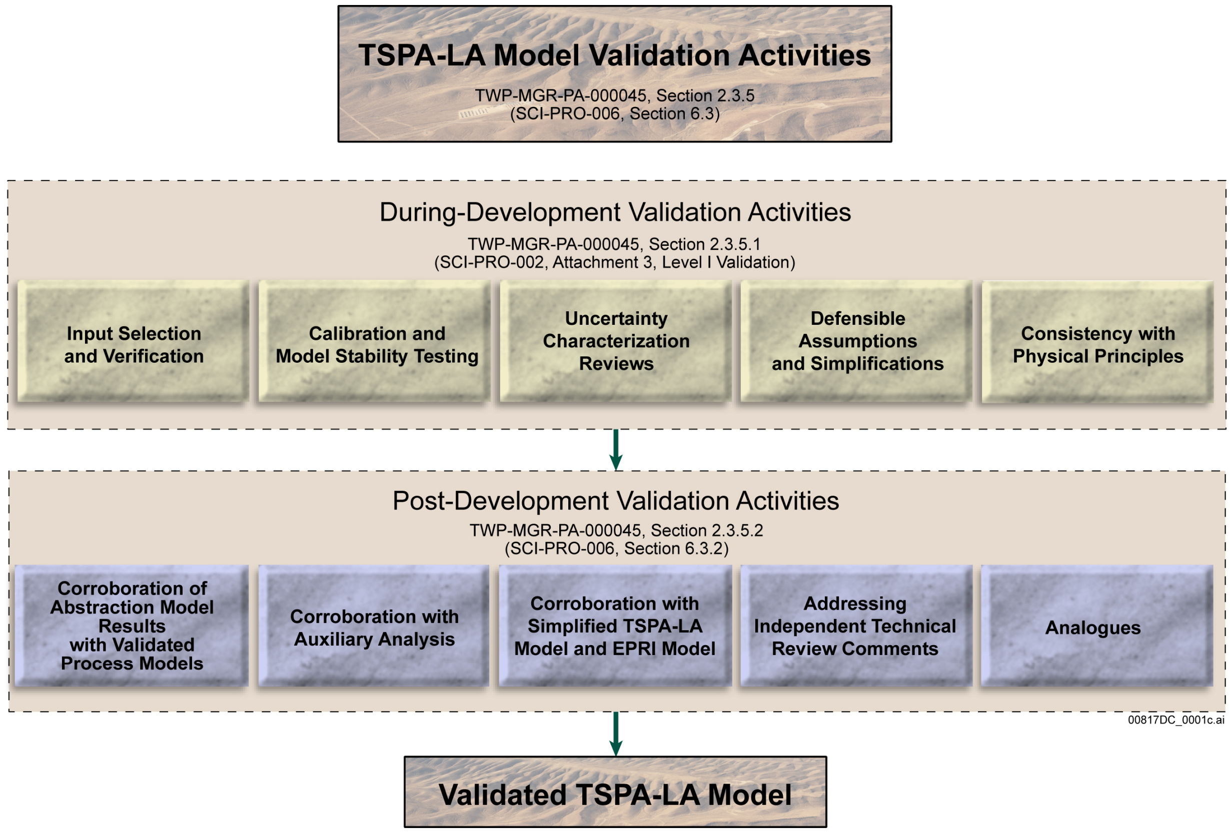
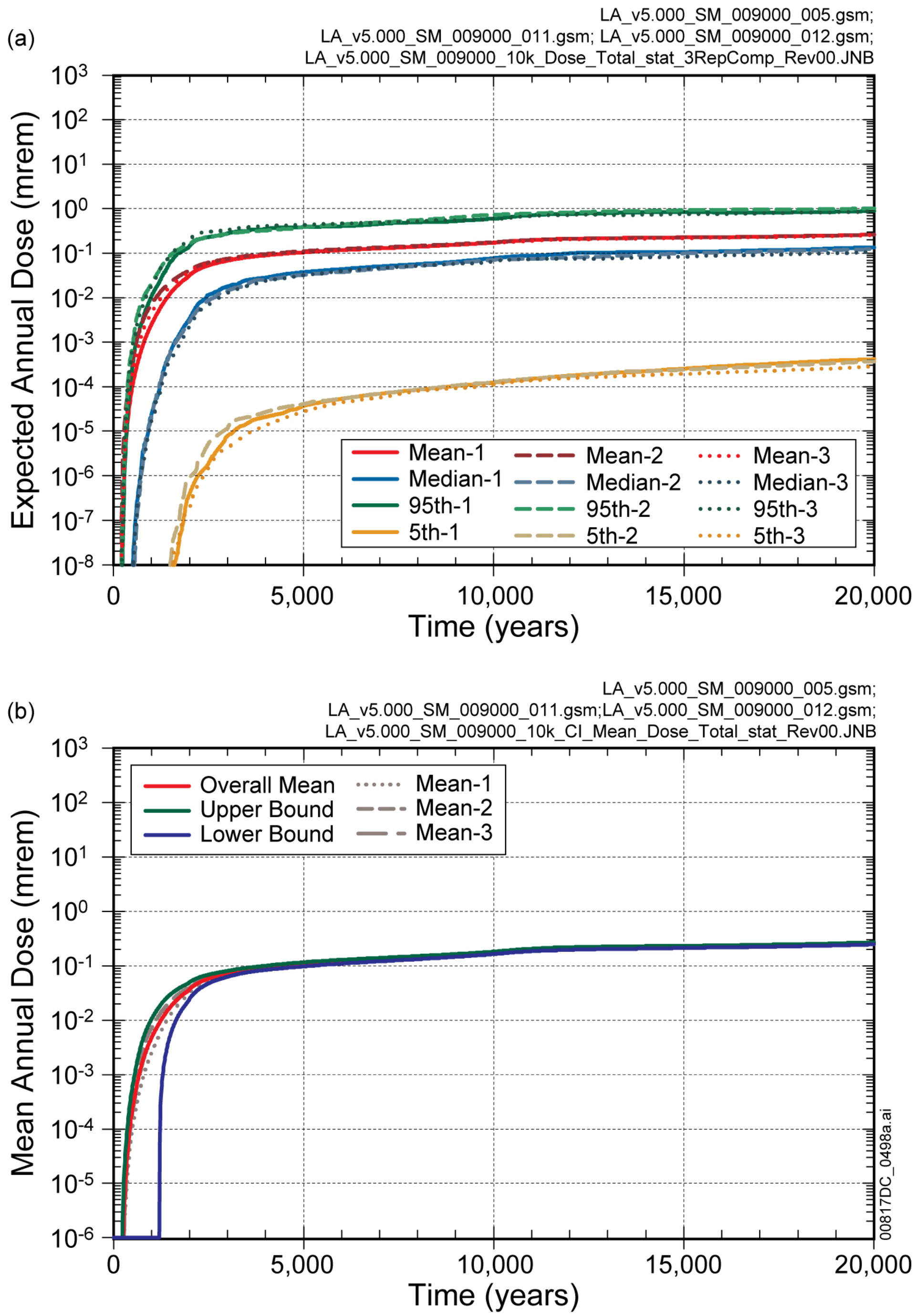
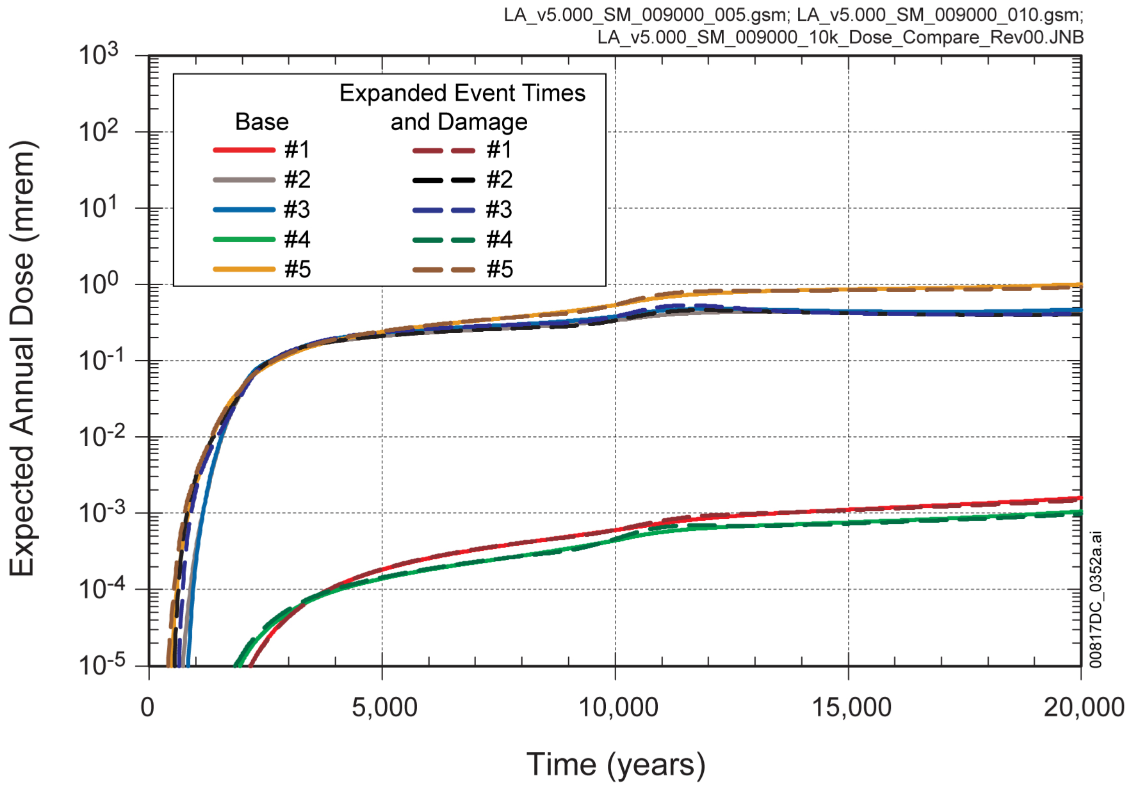


Figure ES-32. Model Validation Approach for the TSPA-LA Model



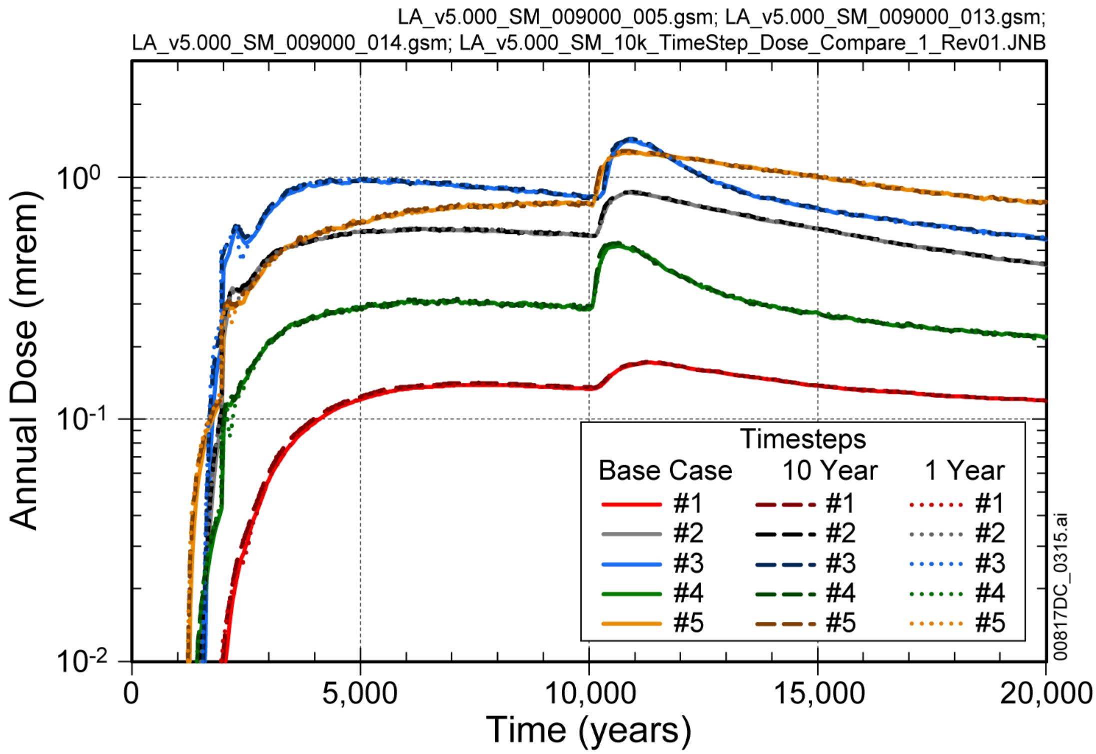
Source: Output DTN: MO0709TSPASTAB.000 [DIRS 182983].

Figure ES-33 Stability of Seismic Ground Motion Modeling Case for 20,000 Years: (a) Comparison of Expected Annual Dose for Three Replicates and (b) Confidence Interval Around Mean Annual Dose



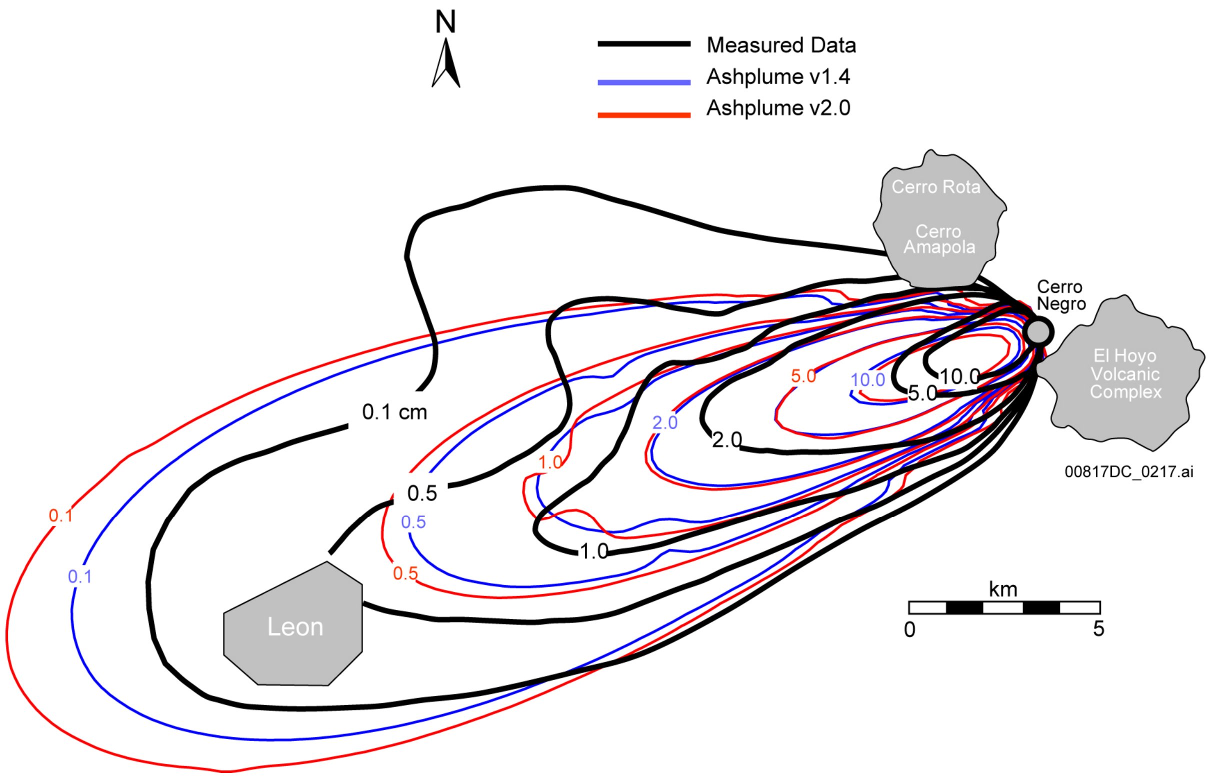
Source: Output DTNs: MO0708TSPAVALI.000 [DIRS 182985] and MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-34. Expected Annual Dose Over 20,000 Years for Seismic Ground Motion Modeling Case Considering Additional Specified Event Times and Damage Fractions



Source: Output DTN: MO0708TSPAVALI.000 [DIRS 182985]

Figure ES-35. Annual Dose from a Seismic Ground Motion Event at 1,000 Years with Damage Fraction 10^{-6} for Three Timestep Schemes

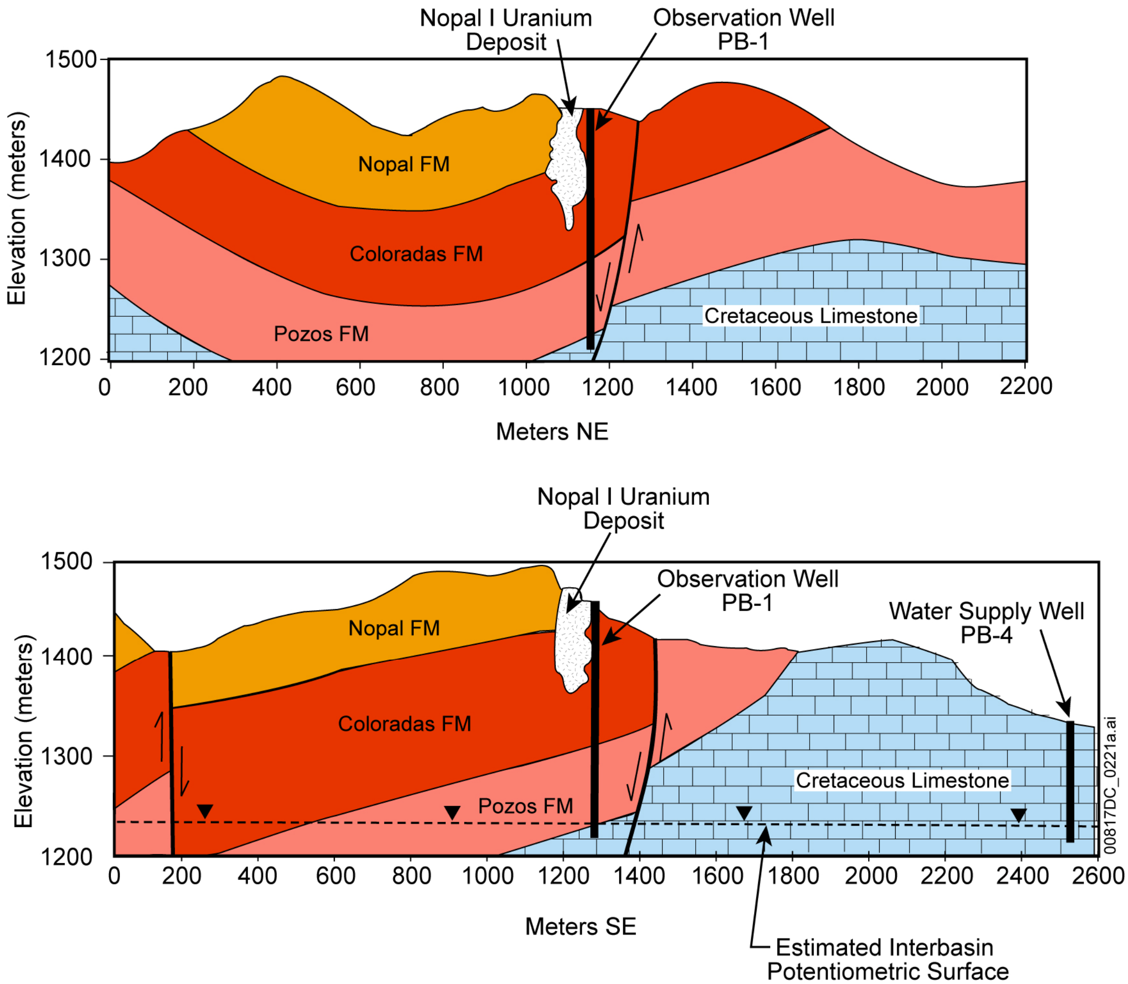


Source: SNL 2007 [DIRS 177431], Appendix L.

Figure ES-36. Comparison of Ash-Fall Thickness at Cerro Negro with ASHPLUME Simulated Results

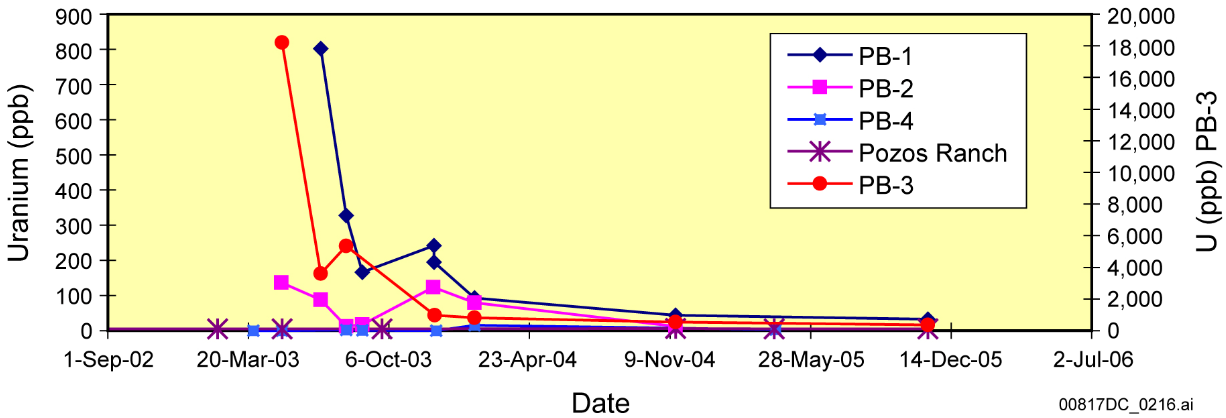
Source: Modified from George-Aniel et al. 1991 [DIRS 105636], Figure 1.

Figure ES-37. Location of Peña Blanca Nopal I Ore Deposit in the Sierra Peña Blanca



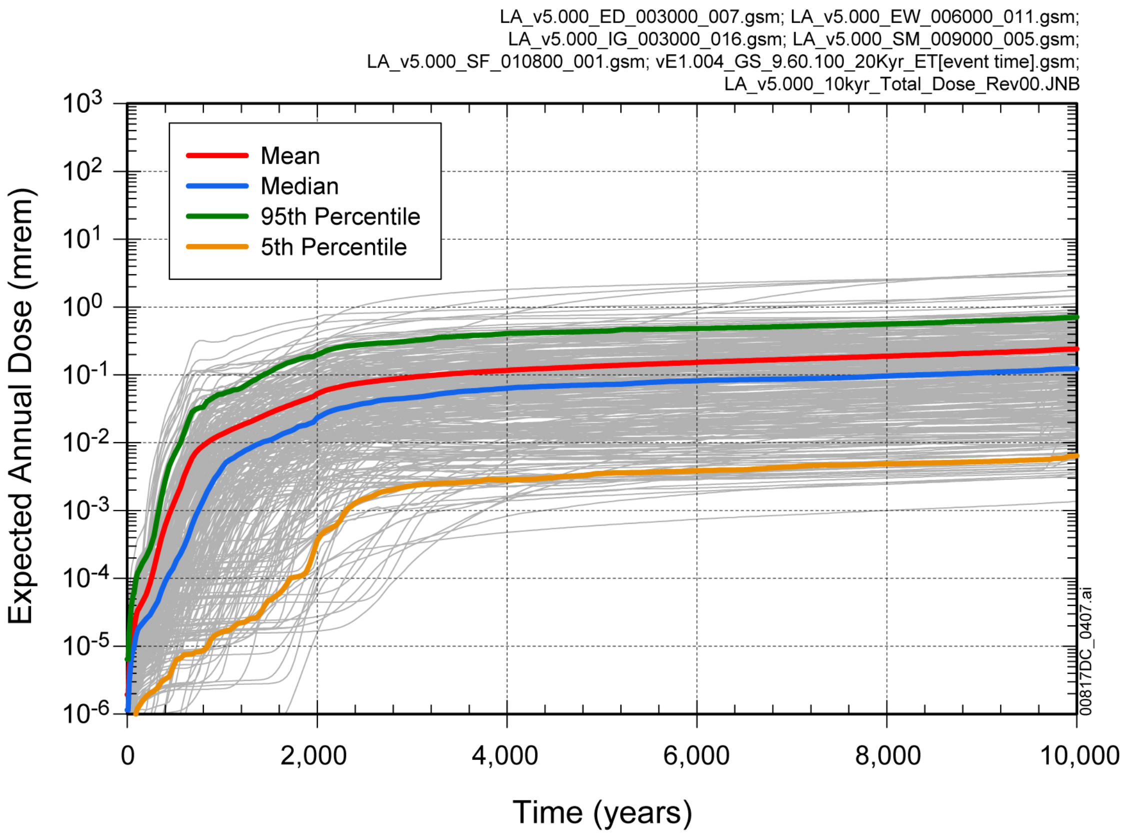
Source: Modified from Pearcy et al. 1993 [DIRS 151774], p. 1-4.

Figure ES-38. Geologic Characterization of Nopal 1 Ore Body



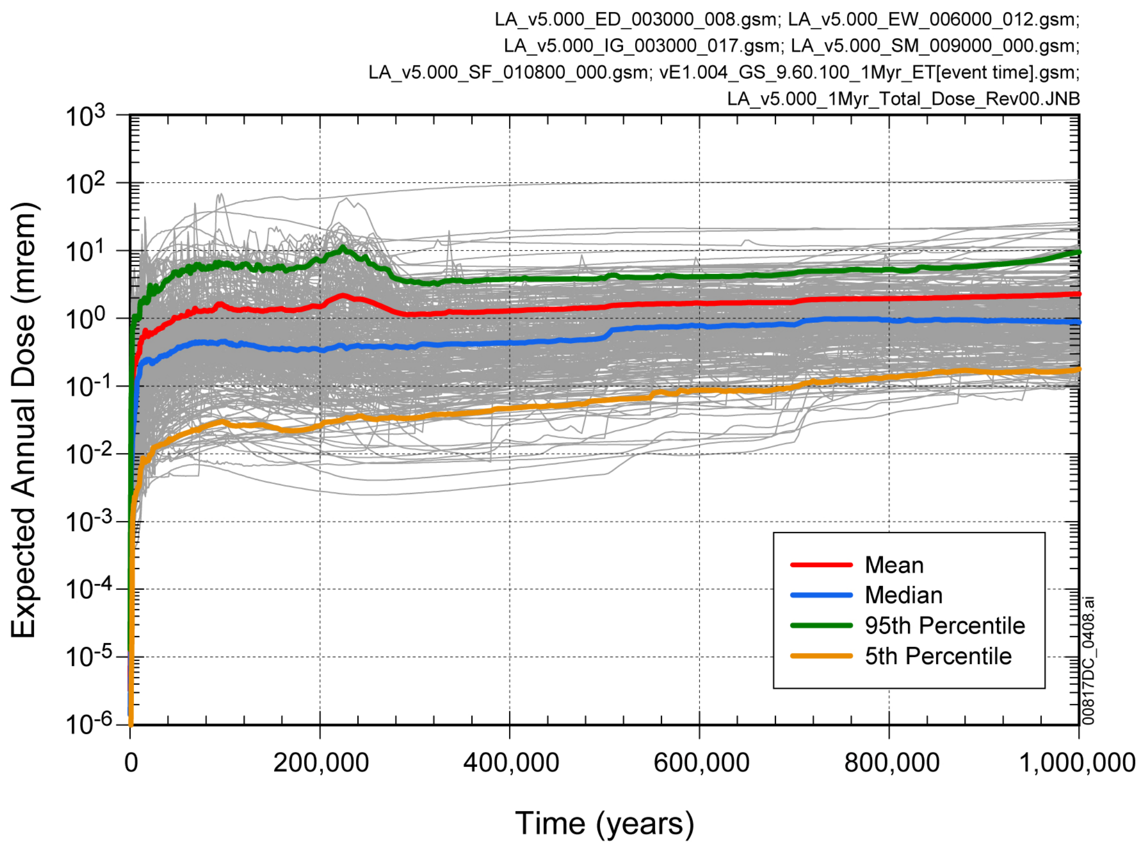
Source: Data from Goldstein et al., 2006 [DIRS 181364], p. 217.

Figure ES-39. Uranium Concentration Determined in Groundwater Samples from Wells at and near the Nopal I Ore Deposit



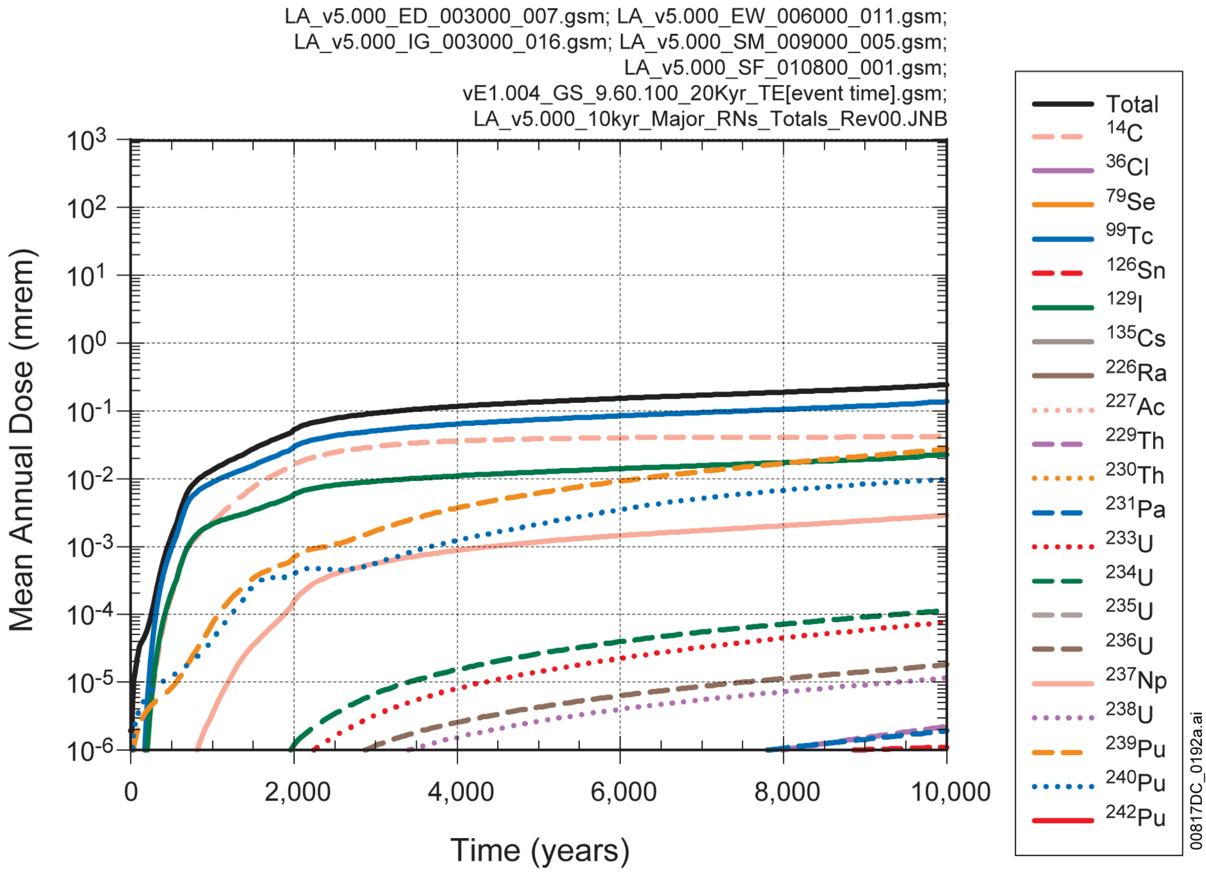
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-40. Total Expected Annual Dose for 10,000 Years after Closure



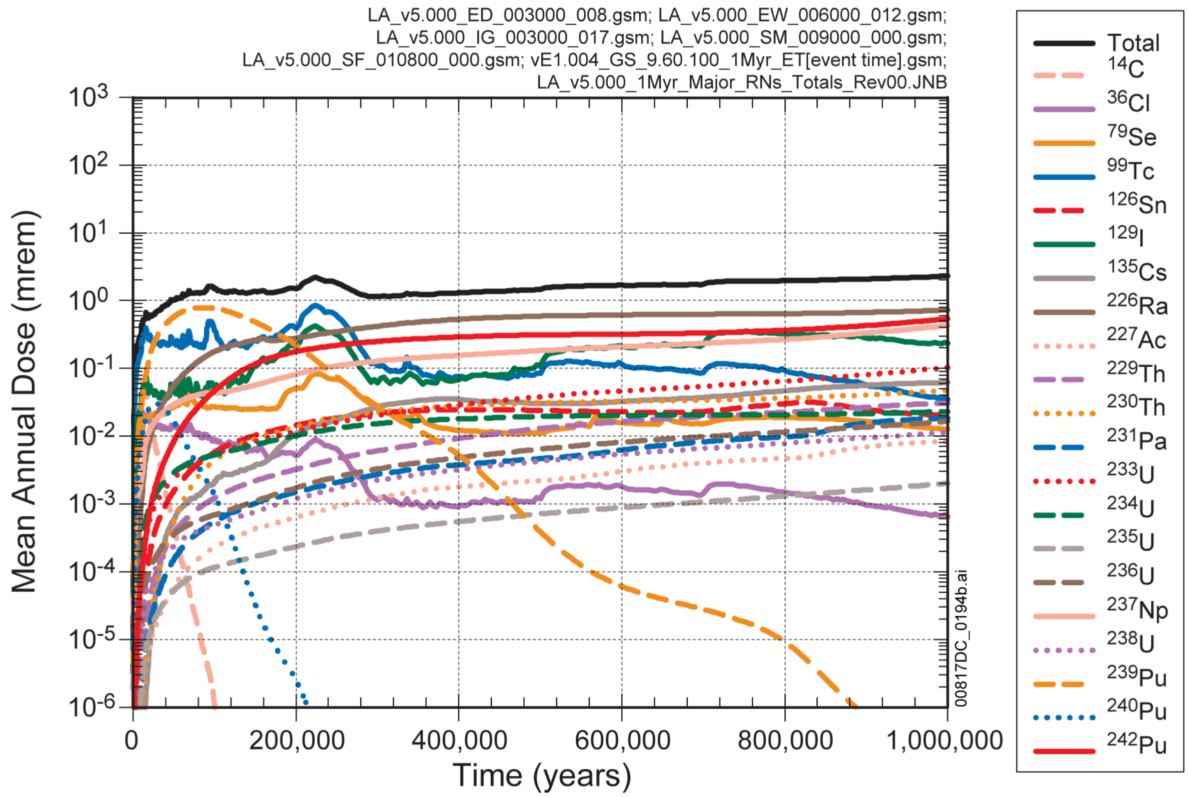
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-41. Total Expected Annual Dose for 1,000,000 Years after Closure



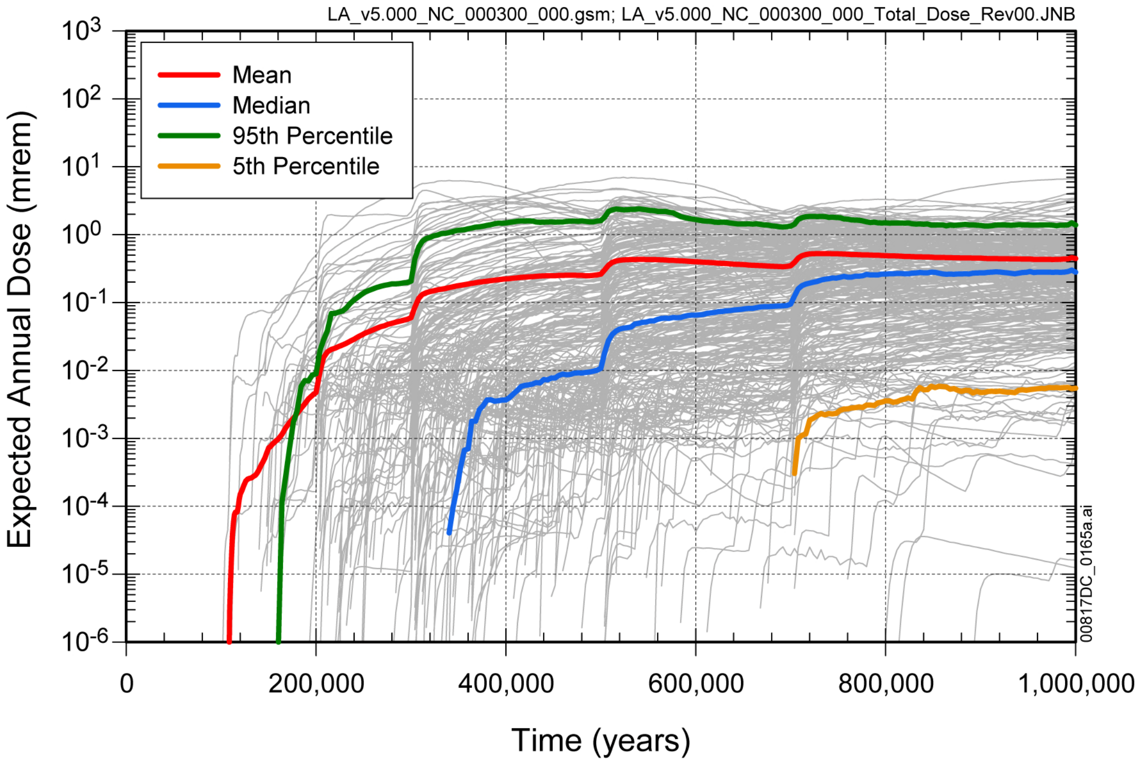
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-42. Contribution of Individual Radionuclides to Total Mean Annual Dose for 10,000 Years after Repository Closure



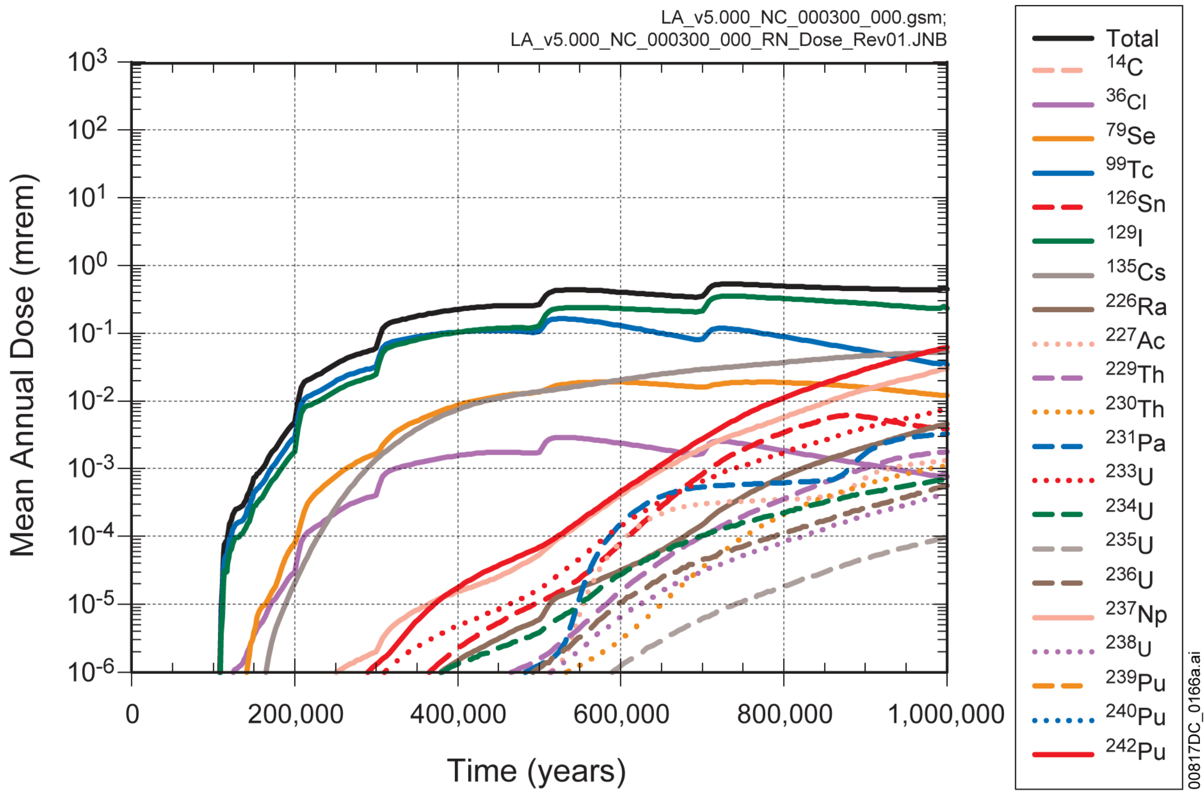
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-43. Contribution of Individual Radionuclides to Total Mean Annual Dose for 1,000,000 Years after Repository Closure



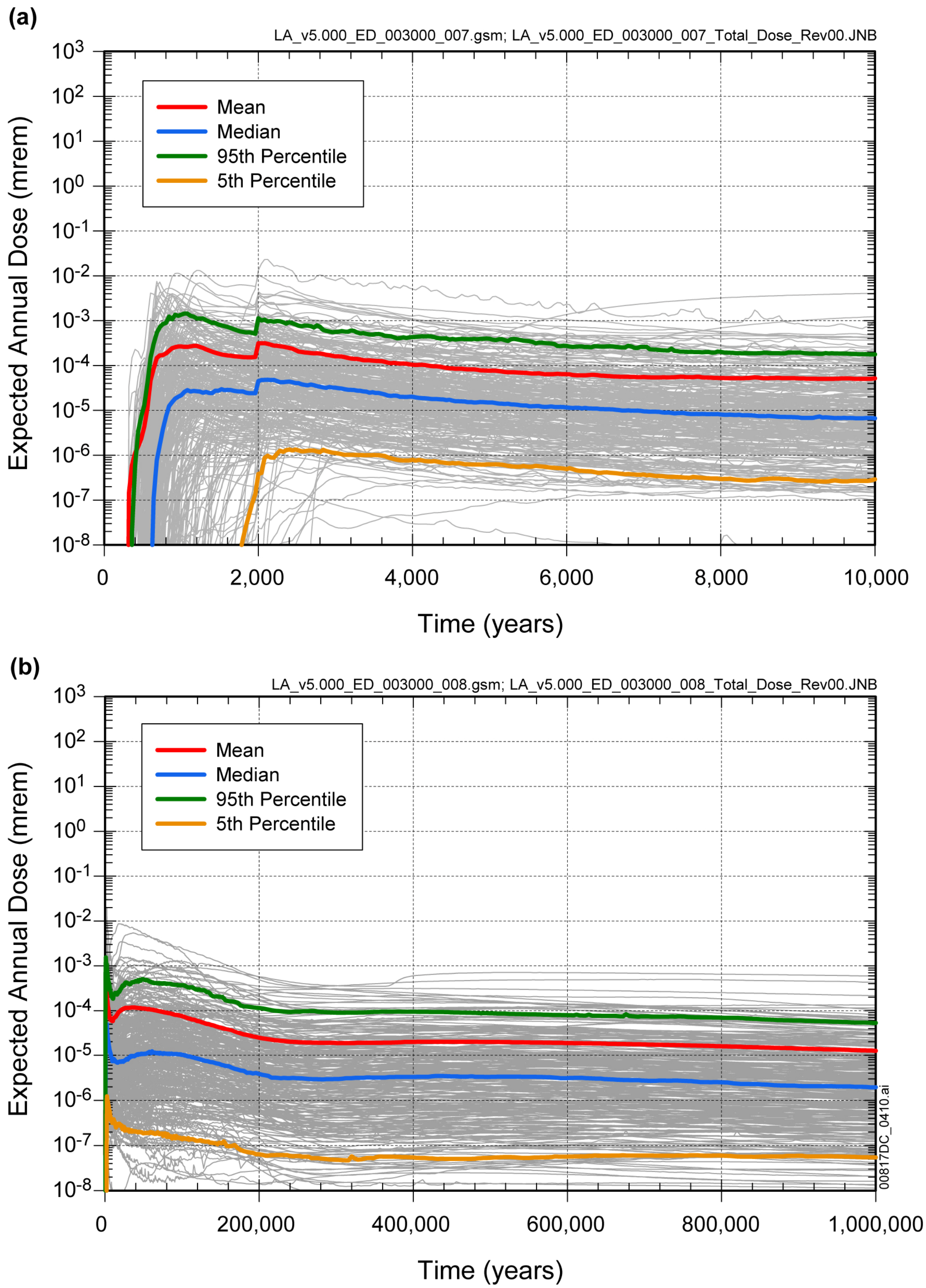
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-44. Annual Dose for the Nominal Scenario Class Modeling Case for the Post-10,000-Year Period



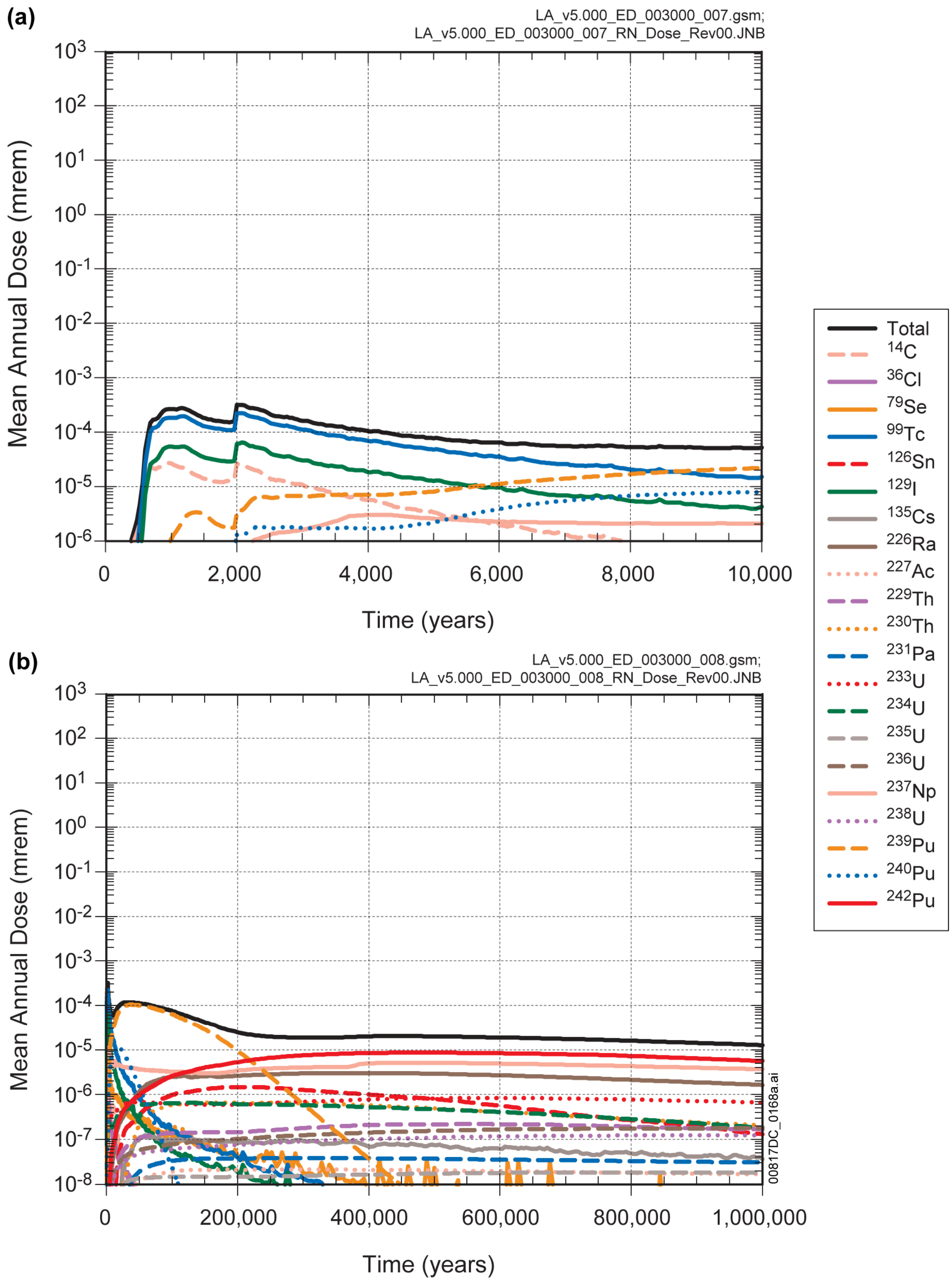
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-45. Mean Annual Dose Contributions from Major Radionuclides for the Nominal Scenario Class Modeling Case for the Post-10,000-Year Period



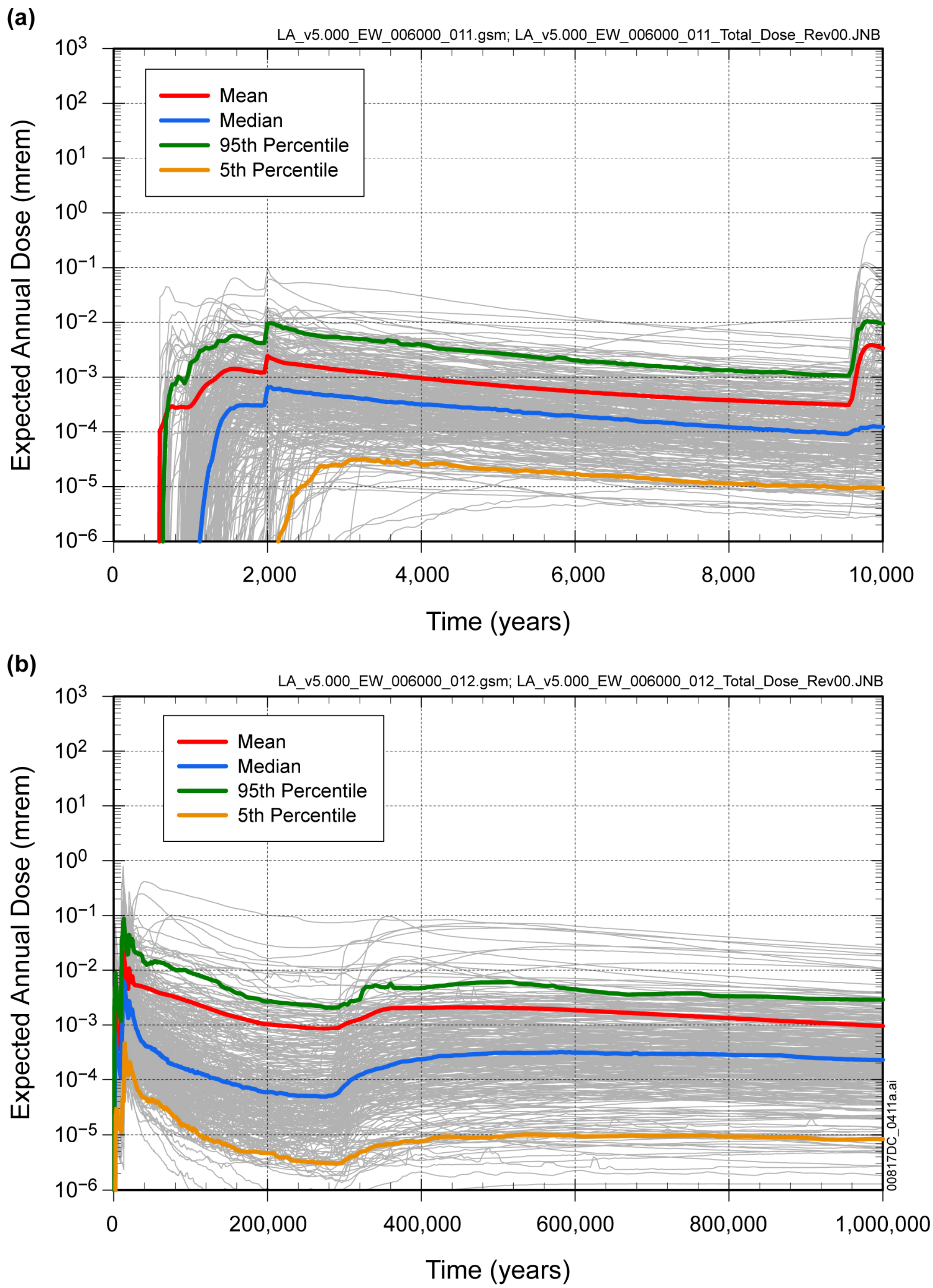
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-46. Expected Annual Dose for the Drip Shield Early Failure Modeling Case for (a) the First 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



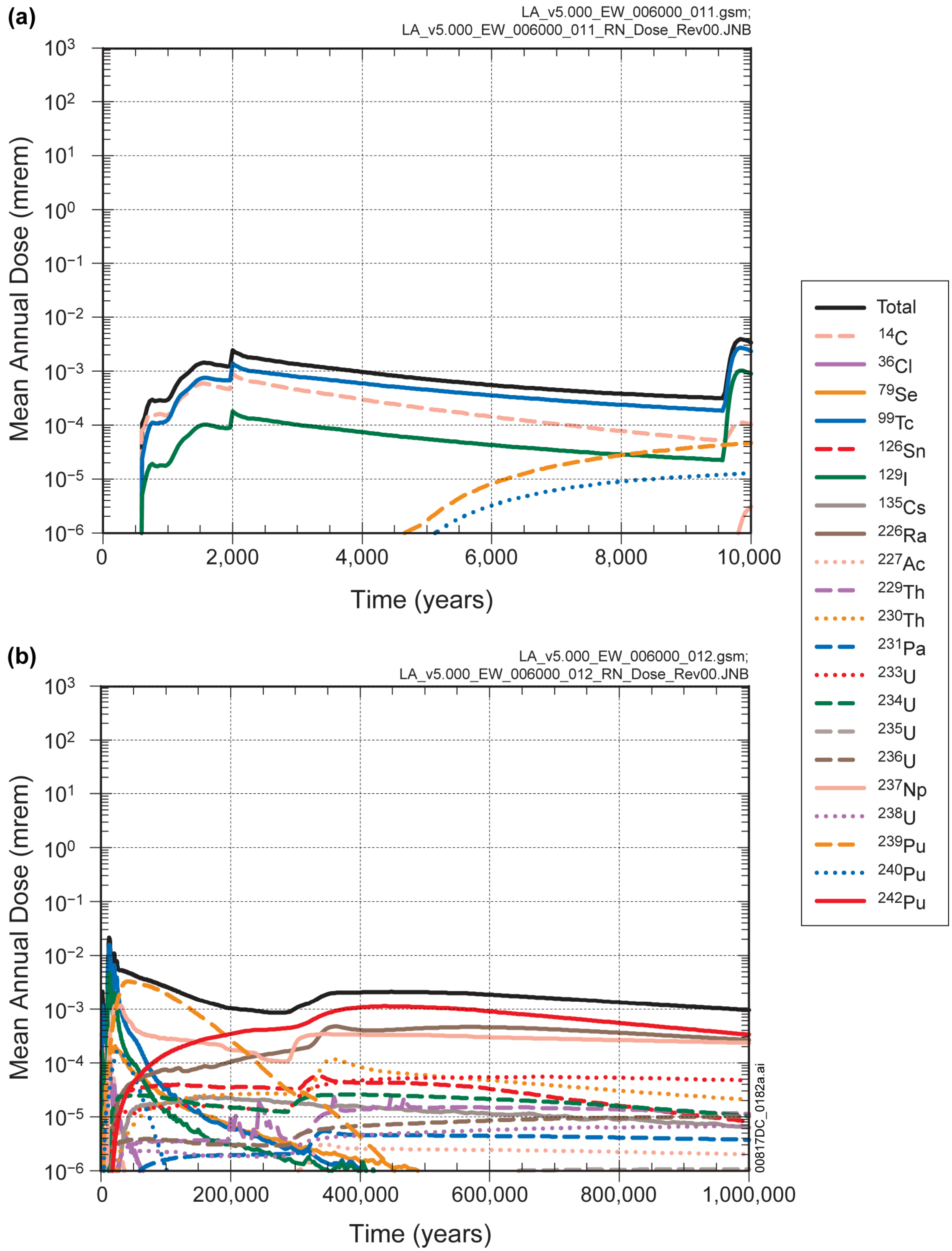
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-47. Mean Annual Dose Contributions from Major Radionuclides for the Drip Shield Early Failure Modeling Case for (a) the First 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



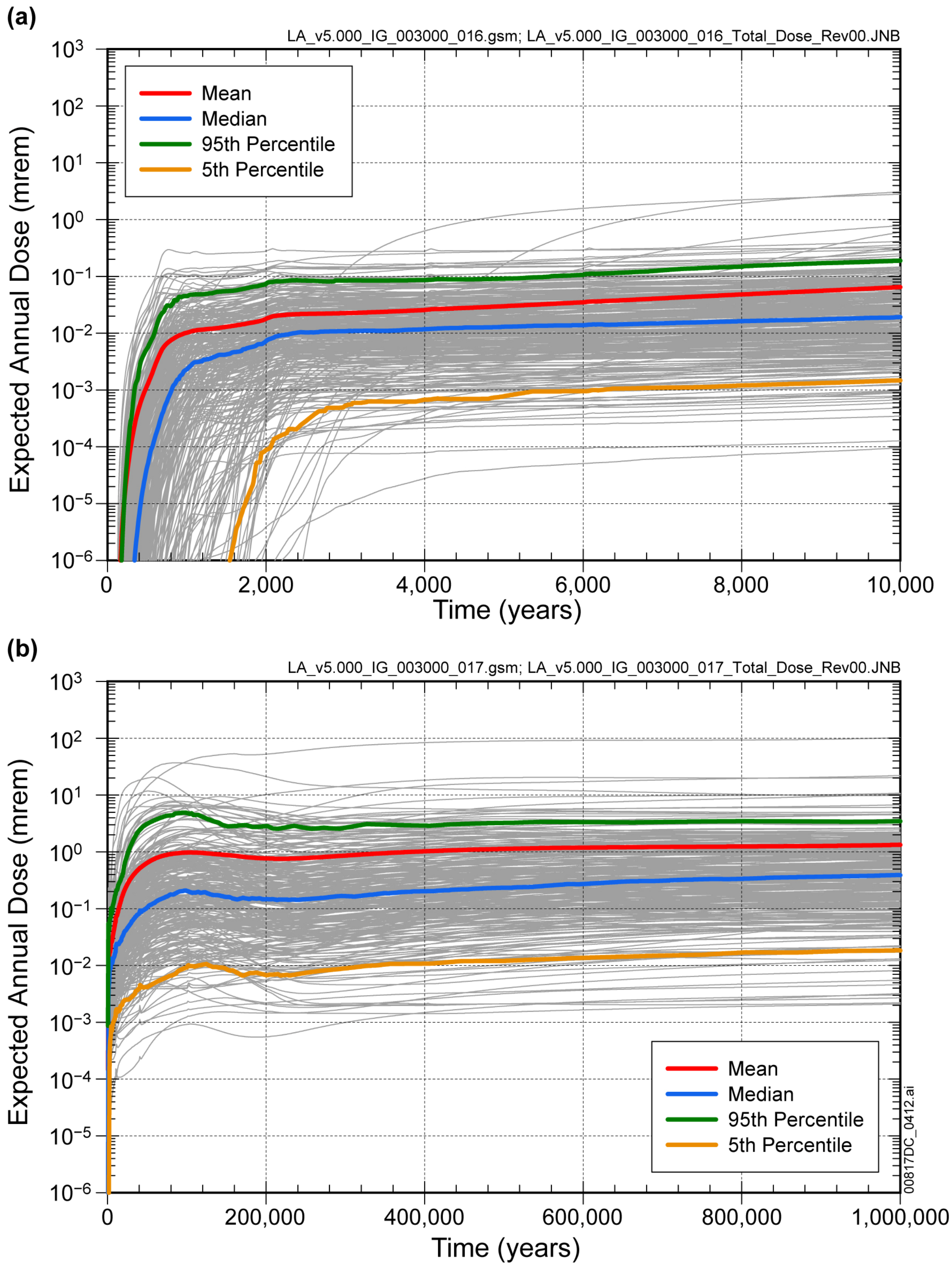
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-48. Expected Annual Dose for the Waste Package Early Failure Modeling Case (a) the First 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



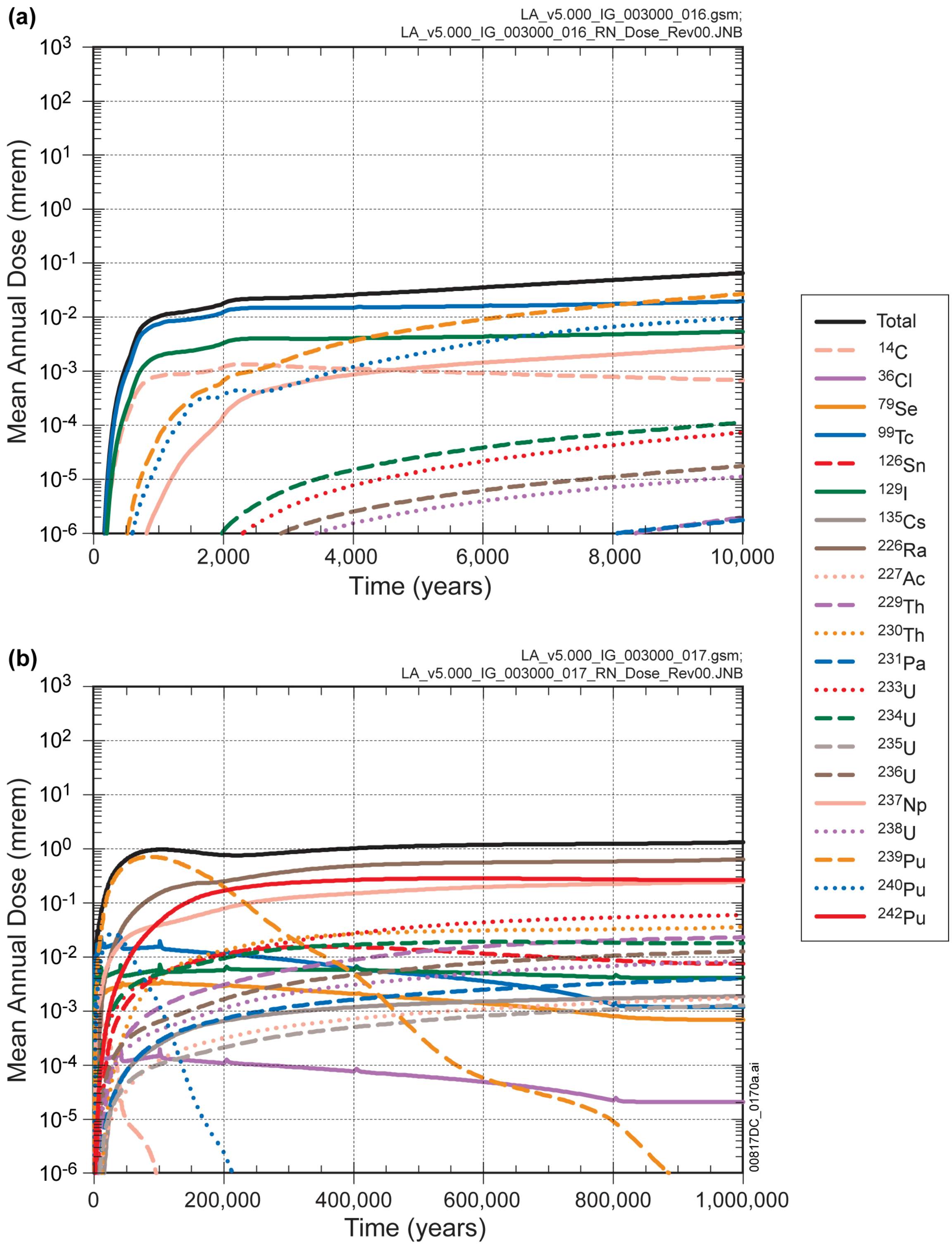
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-49. Mean Annual Dose Contributions from Major Radionuclides for the Waste Package Early Failure Modeling Case for (a) the First 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



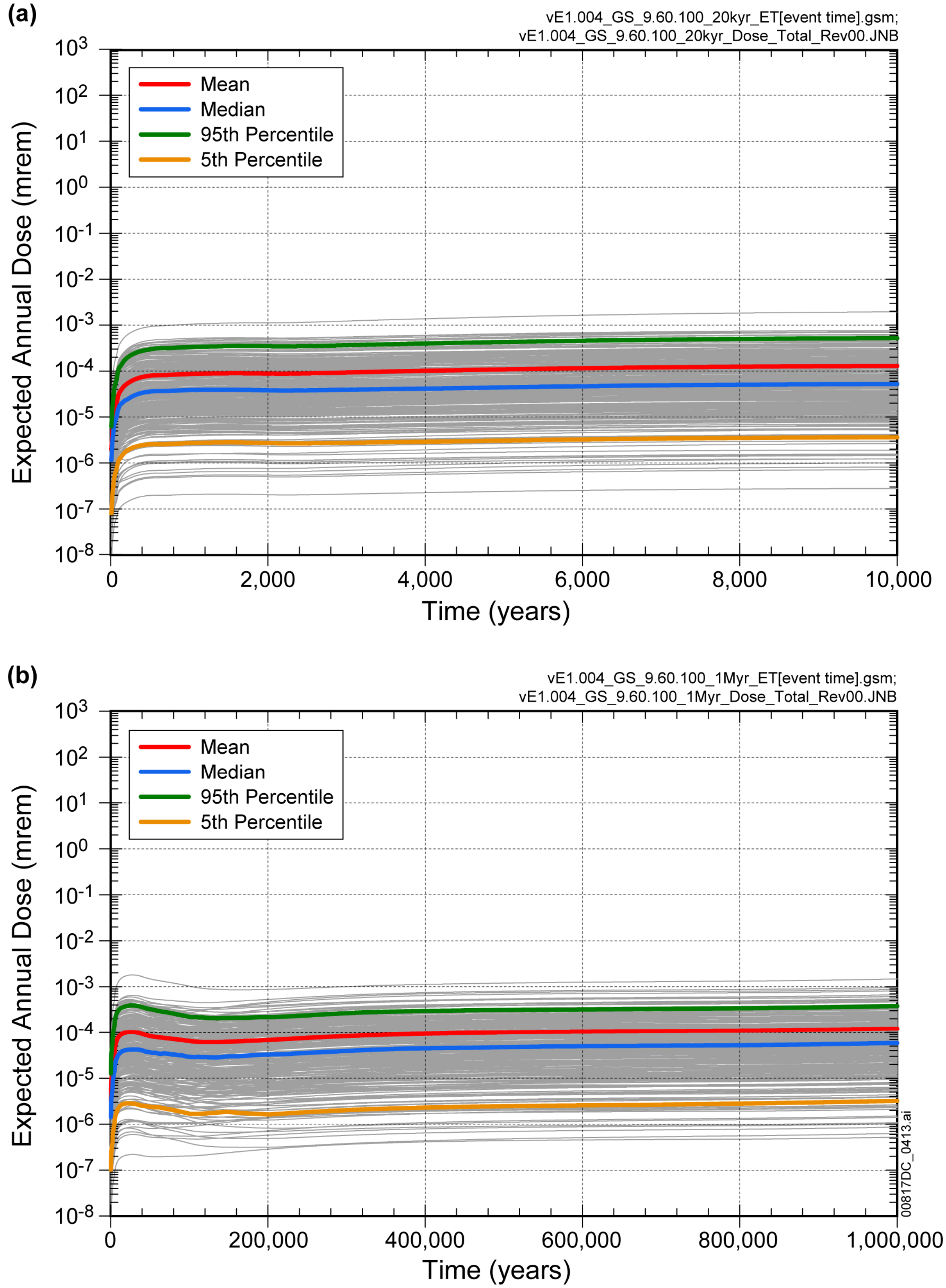
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-50. Expected Annual Dose for the Igneous Intrusion Modeling Case for (a) 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



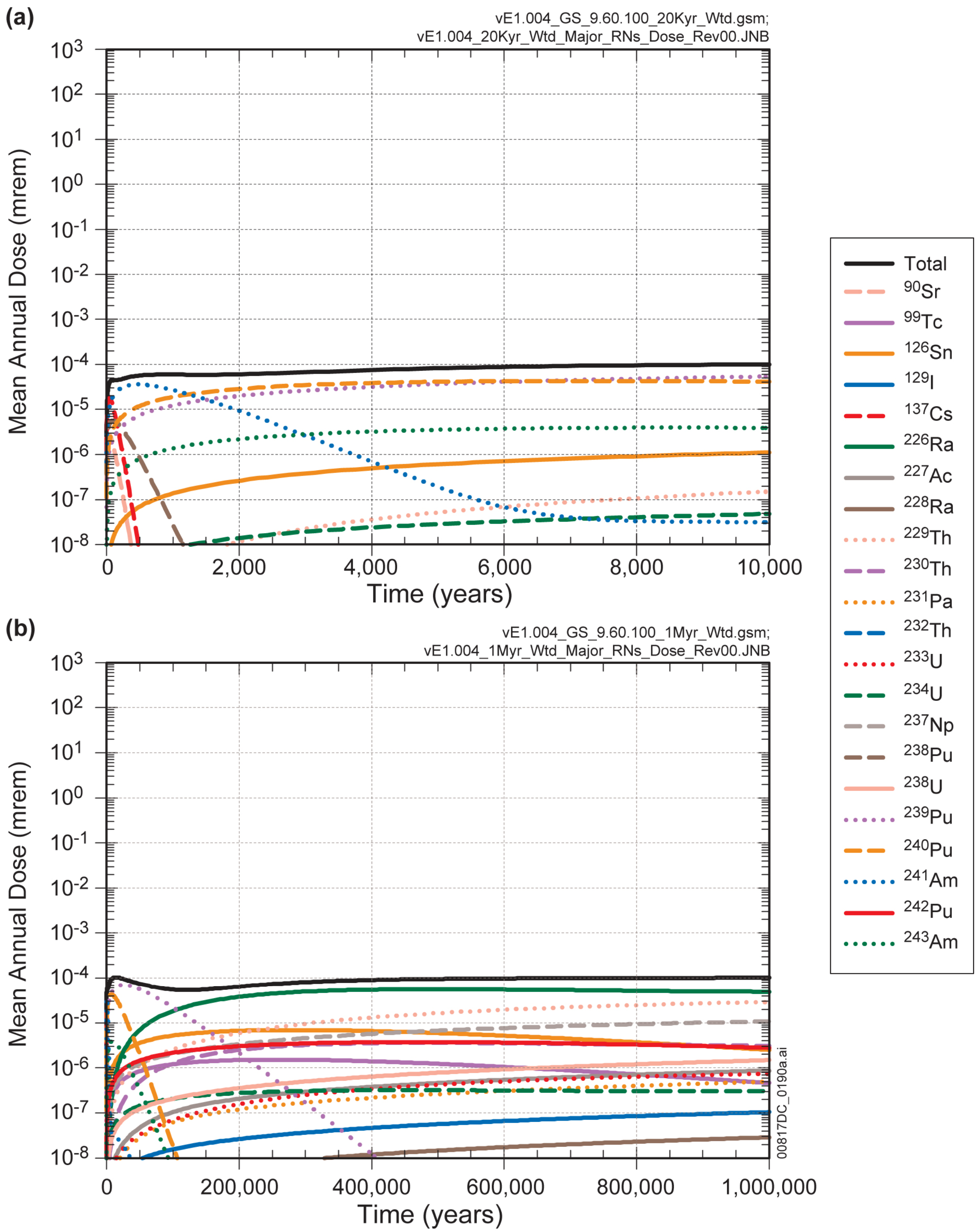
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-51. Mean Annual Dose Contributions from Major Radionuclides for the Igneous Intrusion Modeling Case for (a) the First 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



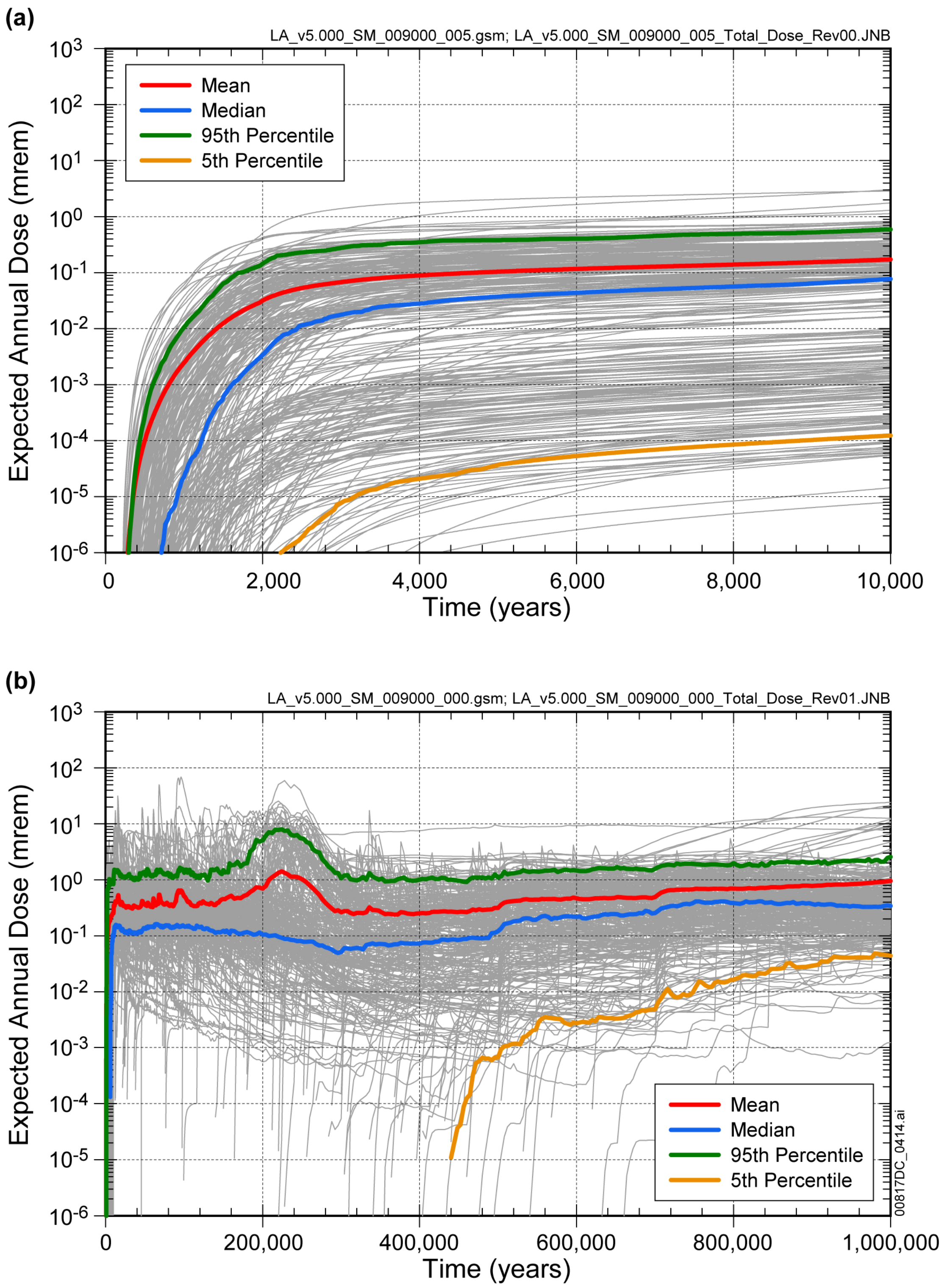
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-52. Expected Annual Dose for the Volcanic Eruption Modeling Case for (a) 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



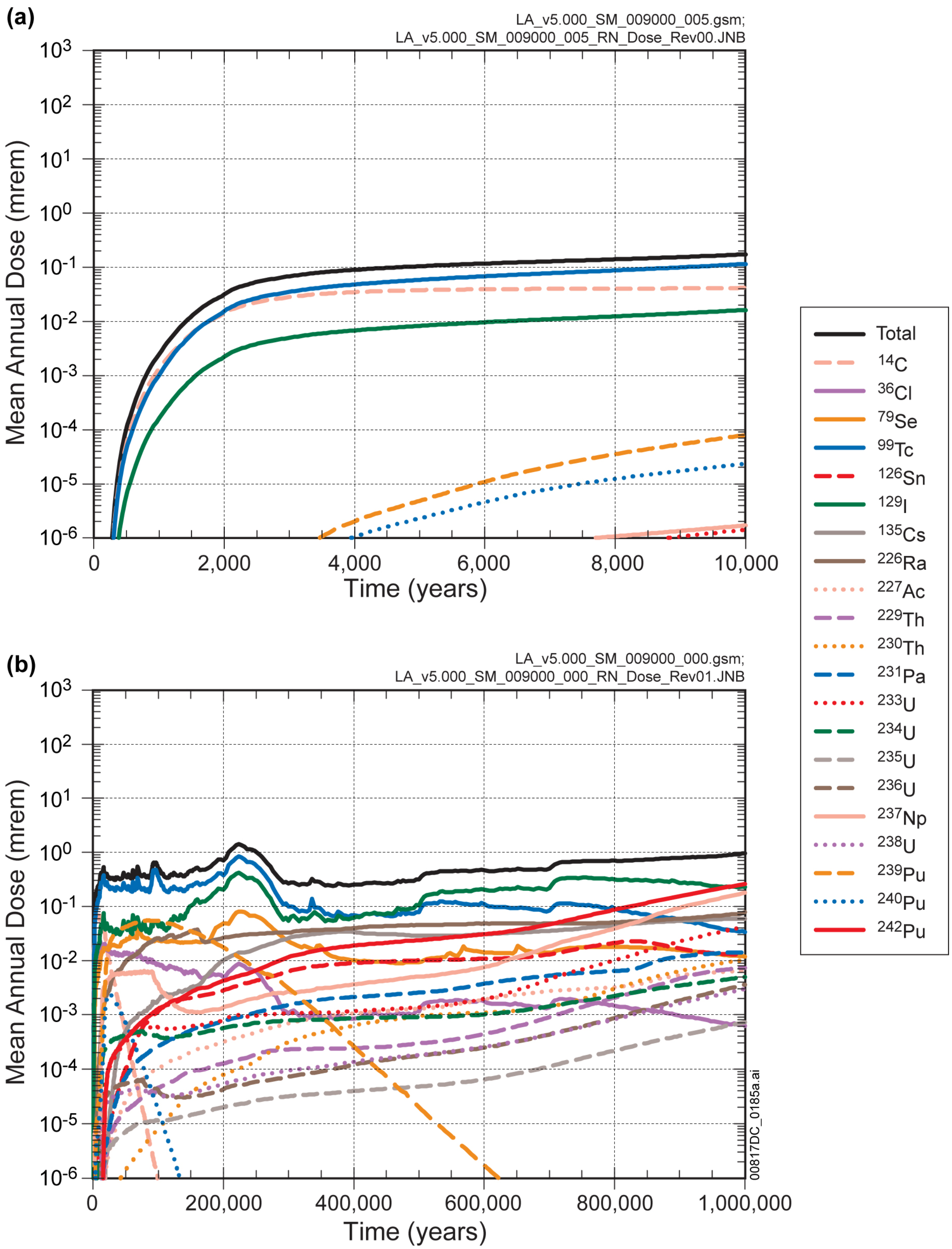
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-53. Mean Annual Dose Contributions from Major Radionuclides for the Volcanic Eruption Modeling Case for (a) the First 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



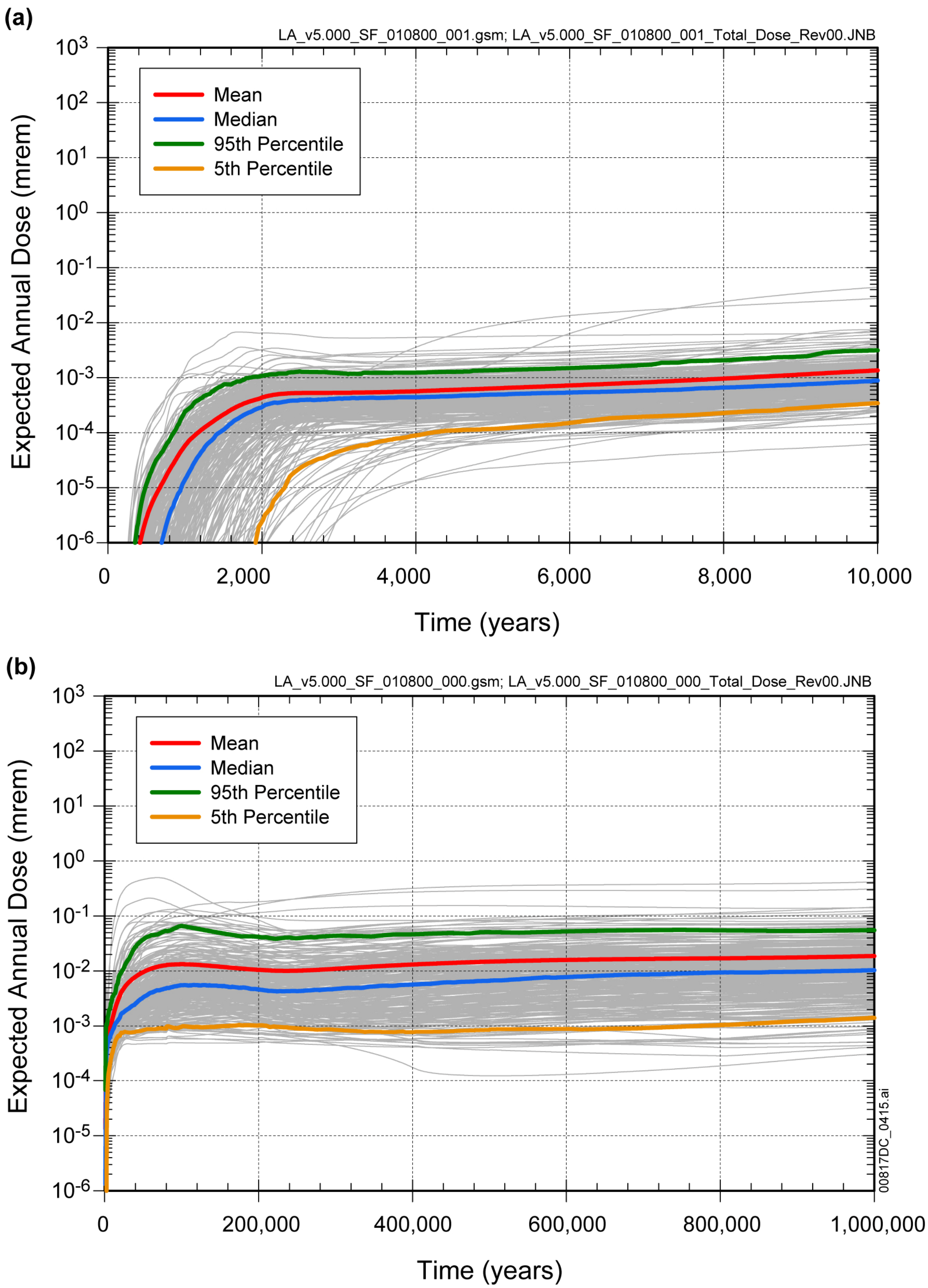
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-54. Expected Annual Dose for the Seismic Ground Motion Modeling Case for (a) 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



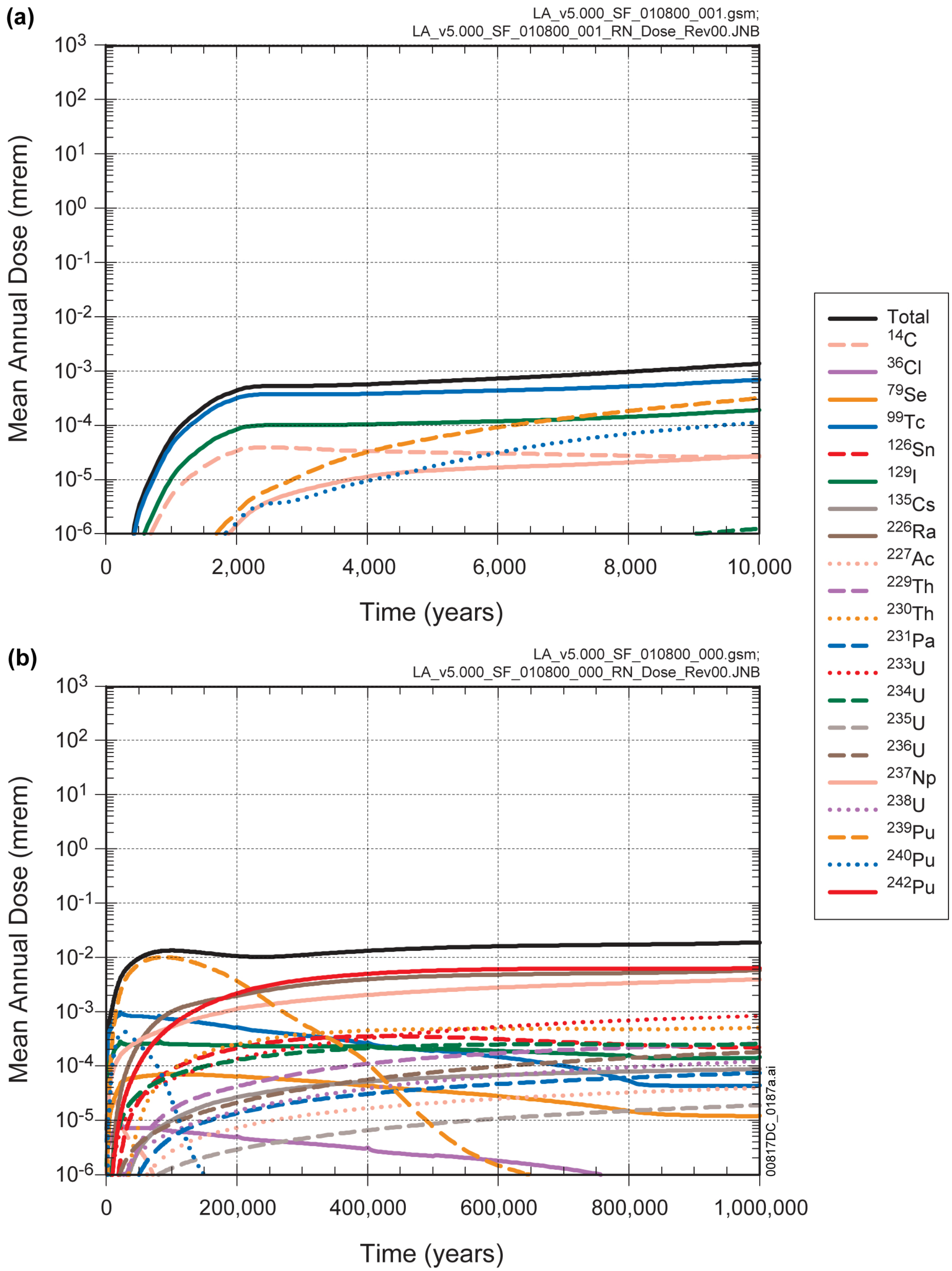
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-55. Mean Annual Dose Contributions from Major Radionuclides for the Seismic Ground Motion Modeling Case for (a) the First 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



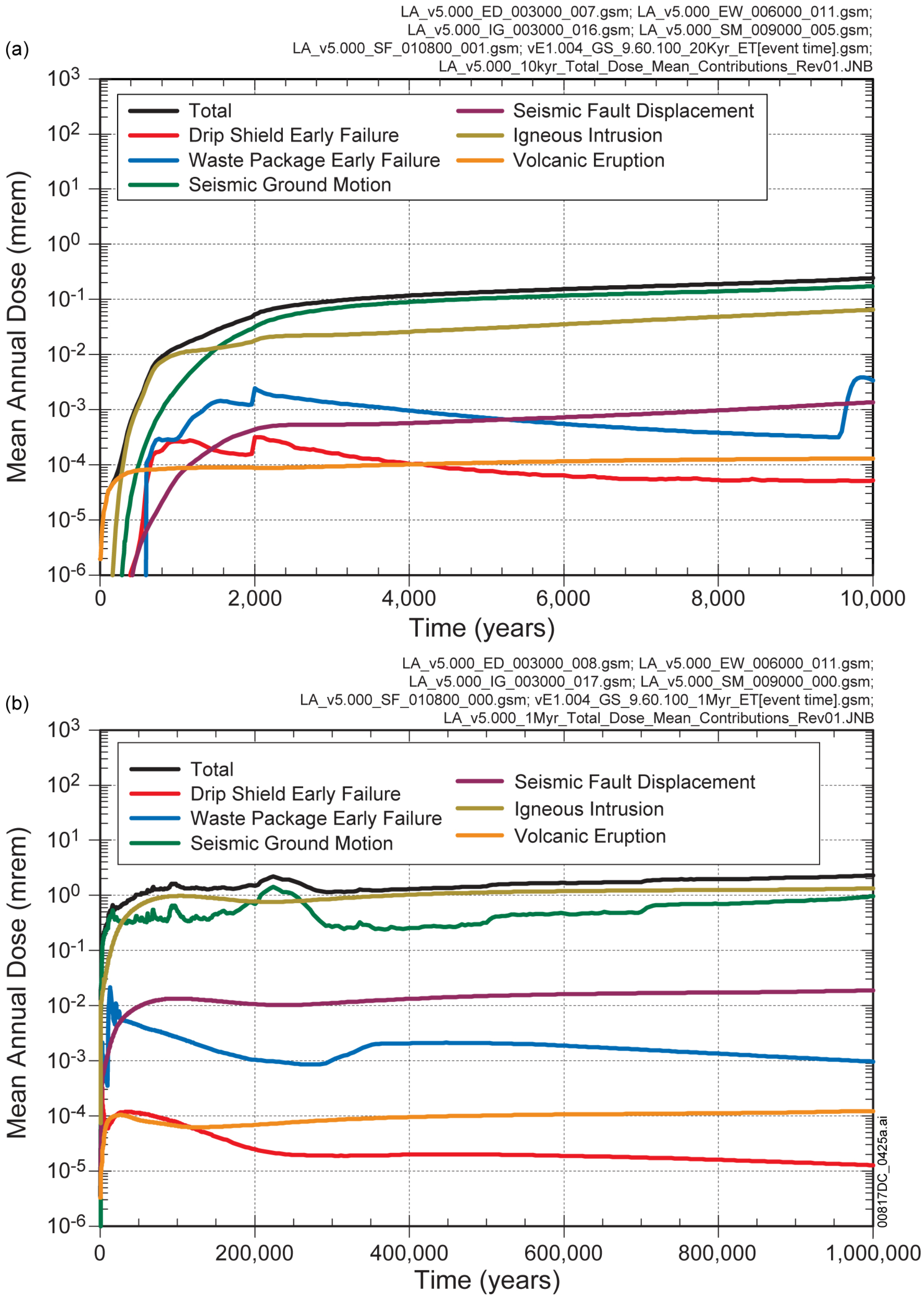
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-56. Expected Annual Dose for the Seismic Fault Displacement Modeling Case for (a) 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



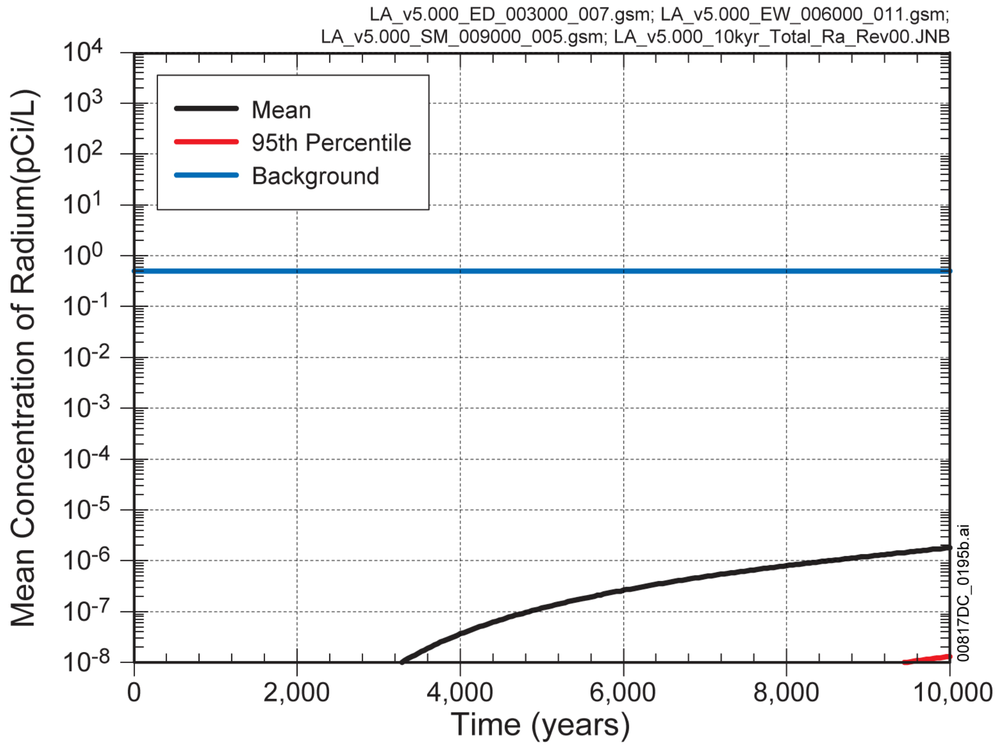
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-57. Mean Annual Dose Contributions from Major Radionuclides for the Seismic Fault Displacement Modeling Case for (a) 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



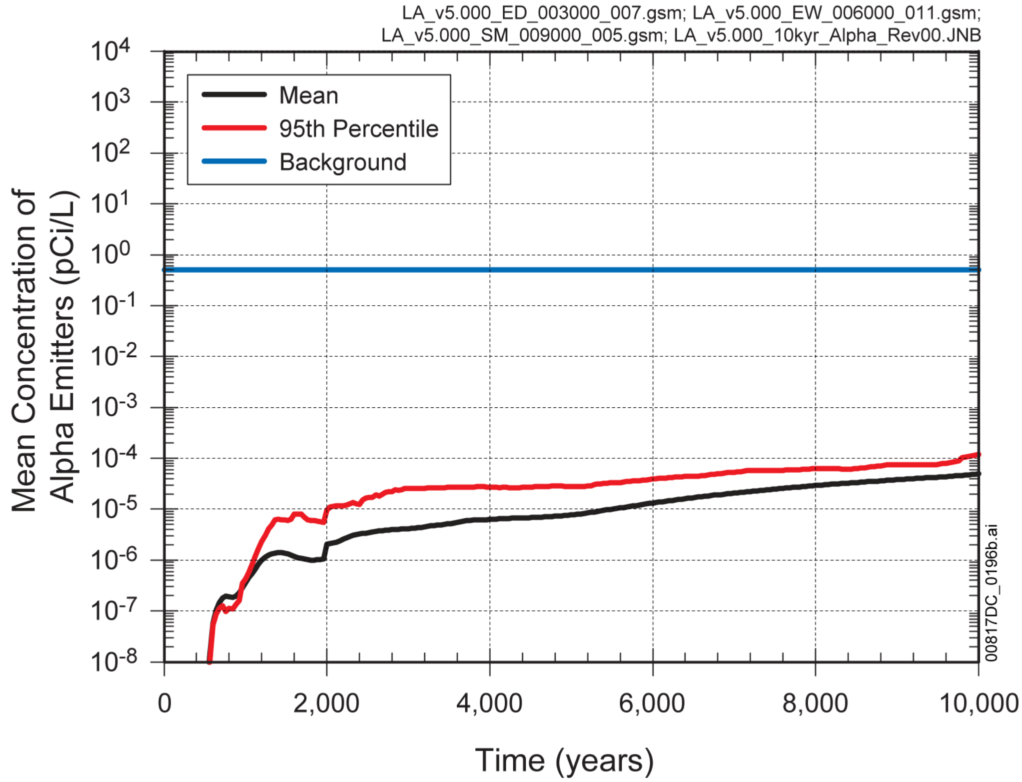
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-58. Total Mean Annual Dose and Median Annual Doses for Each Modeling Case for (a) 10,000 Years after Repository Closure and (b) Post-10,000-Year Period



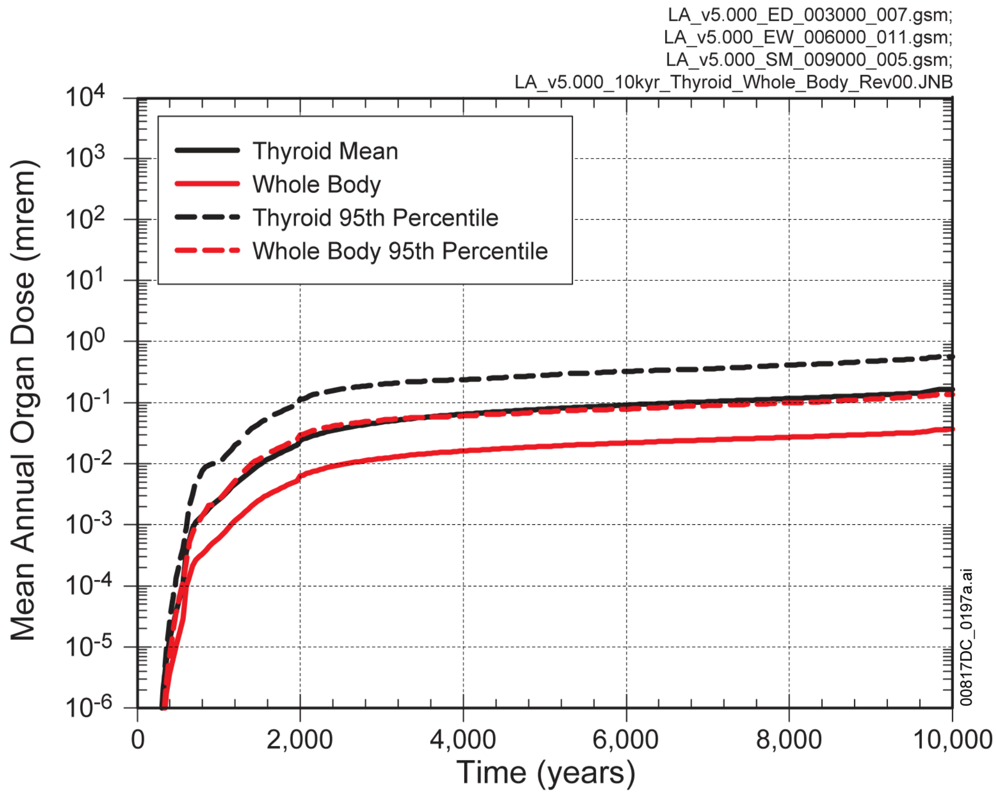
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-59. Combined ^{226}Ra and ^{228}Ra Activity Concentrations, Excluding Natural Background, for Likely Features, Events, and Processes Using Nominal, Early Failure, and Seismic Ground Motion Damage Processes



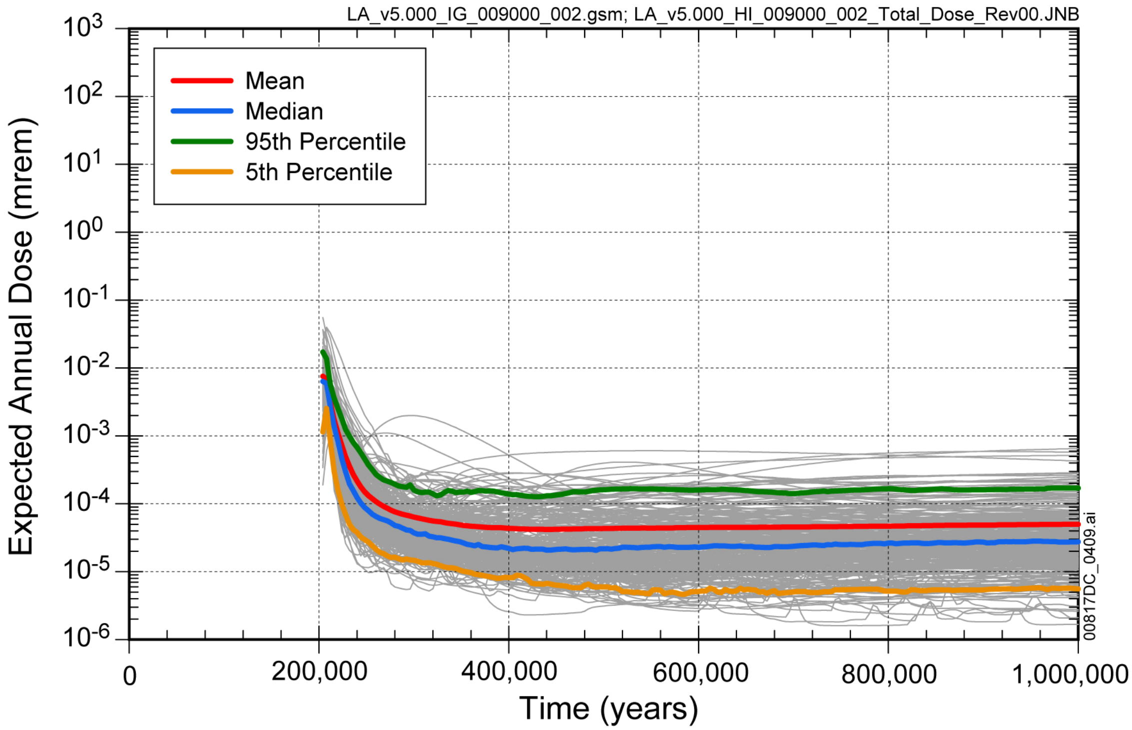
Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-60. Combined Activity Concentrations of All Alpha Emitters (including ^{226}Ra but without radon and uranium isotopes), Excluding Natural Background, for Likely Features, Events, and Processes Using Nominal, Early Failure, and Seismic Ground Motion Damage Processes



Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-61. Mean Annual Drinking Water Dose from Combined Beta and Photon Emitters for Likely Features, Events, and Processes using the Nominal, Early Failure, and Seismic Ground Motion Damage Processes



Source: Output DTN: MO0709TSPAREGS.000 [DIRS 182976].

Figure ES-62. Expected Annual Individual Dose at the RMEI Location from Human Intrusion 200,000 Years after Repository Closure